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USSR Report

TRANSPORTATION

No. 112

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AIR

'SOYUZTRANZIT' FOREIGN TRADE ASSOCIATION DIRECTOR ON CONTAINERIZED CARGO SERVICES

Moscow VOZDUSHNYY TRANSPORT in Russian 13 Jan 83 p 3

[Interview with A. N. Nazarov, general director of the Soyuztranzit All-Union Foreign Trade Association by VOZDUSHNYY TRANSPORT correspondent I. Grigor'yev: "Aeroflot's Partners: The Container Gains Altitude"]

> [Text] A. N. Nazarov, general director of the Soyuztranzit All-Union Foreign Trade Association, answers questions of a VOZDUSHNYY TRANSPORT correspondent.

[Question] The Soyuztranzit V/O [Foreign Trade Association] was set up quite recently, in December 1979. Anatoliy Nikolayevich, I would like to find out about the functions and tasks of your association.

[Answer] As a matter of fact, Soyuztranzit was formed three years ago, but the predecessor of our association was Soyuzvneshtrans, which began work of transporting foreign direct-shipment freight through USSR territory in 1967. If we go deeper into history, it is worthwhile remembering that direct shipments through USSR territory began back in the 1920's. In that period they were made over routes open for direct shipment and import and export duties were not collected.

The Soyuztranzit V/O is a general operator in direct shipments of foreign freight through the territory of our country. You of course know that the shortest routes from Europe to the Near, Middle and Far East lie across USSR territory. This circumstance, as you realize, is an essential factor for drawing foreign freight. Soyuztranzit organizes the shipment of this freight through USSR territory by sea, river, rail, motor and air transportation, as well as in mixed service from Europe to Iran, Afghanistan, Japan and other countries of the Near, Middle and Far East and Southeast Asia.

[Question] The one-millionth anniversary container was shipped directly through USSR territory from Japan to Europe in September 1982. How do you evaluate this event?

[Answer] Above all as proof of the great popularity and high competitiveness of the Trans-Siberian container line, which has been functioning successfully for

15 years. This kind of shipment presently has become very popular among our West European and Japanese partners.

Such shipments were developed back in the 1920's. Our foreign partners saw the advantages of direct shipment through Siberia back then, but mass direct shipments of large-freight containers over the Trans-Siberian route began in the late 1960's.

[Question] Tell me please in more detail about the Trans-Siberian Container Service (TSKS)

[Answer] The TSKS is a modern system of containerized, intermodal (mixed) shipments made over the shortest route between Europe and countries of the Far East, which extends across USSR territory over the Trans-Siberian Railroad.

The advantages of this route from Europe to Japan and back are obvious. Compare it: While a distance of from 20,000 to 27,000 km has to be covered with the traditional method of freight shipment by sea through the Suez and Panama canals or around Africa over the Indian Ocean, this is reduced to 13,000 km, i.e., practically in half, with container transportation by the Trans-Siberian route. Is it necessary to mention that foreign shippers clearly prefer this route?

The geography of the Trans-Siberian Container Service constantly is expanding. Containers now can be delivered to Manila, Hong Kong, Australian ports and other countries in the Far Eastern region in addition to Japan.

Freight shipments through Siberia are made by all kinds of transportation, including air. Four kinds of service have been organized for direct freight shipments by the TSKS: "Transrail," "Transea," "Tracons" and "Transair." I will mention each of these kinds of transportation briefly.

The "Transrail" service provides rail shipments from Soviet border stations to the ports of Japan and other ports of Far Eastern countries, as well as in the reverse direction.

"Transea" is the transportation of containers from West European ports to Soviet destinations on the Baltic Sea, Sea of Azov and Black Sea and reshipping them by rail to ports of Nakhodka and Vostochnyy, then reloading the cargoes on merchant vessels for delivery to ports of destination.

The "Tracons" service provides shipments of containers by motor transport from internal European points to the USSR border, from which the containers are sent by rail to the ports of Nakhodka and Vostochnyy for further shipment by sea to Japan.

[Question] A fourth kind of service recently was organized for direct shipment of freight via Siberia--"Transair," i.e., the shipment of containers by air transportation... What have the first results of using aviation in Soyuztranzit operations shown?

[Answer] We are using this kind of shipment basically for transporting urgent cargoes. As in the other kinds of TSKS, "Transair" uses a mixed kind of shipment.

Containers are sent from Luxembourg by an Aeroflot Il-76T aircraft via Moscow to Vladivostok, then by motor transport to Nakhodka or Vostochnyy, and from there by sea to Yokohama. In the reverse direction a container from Vladivostok is sent by aircraft to Luxembourg and then by motor transport to its destination.

Thus the time of freight delivery from Europe to Japan does not exceed ten days, which is considerably less than shipment by other kinds of service. Three 20-foot containers are delivered in one aircraft.

In our opinion, the TSKS Luxembourg-Vladivostok-Japan air transit line is a reliable and economic delivery route for direct-shipment cargoes.

[Question] In your view, Anatoliy Nikolayevich, what are the prospects for development of "Transair"?

[Answer] We believe that this kind of shipment has the most favorable prospects. The flow of freight sent by air is rising noticeably with each year. While in 1980 air transportation carried 151 containers, this number rose to 228 in 1981, and in nine months of the past year 350 containers already have been delivered. I believe the shipment of 600 containers per year is far from the limit for "Transair".

It must be said that foreign shippers are showing great interest in a further development of this kind of shipment. For example, during my recent trip to Japan our partners expressed the following desire. In particular, the question was asked: Inasmuch as freight shipments over the Trans-Siberian main air route increased in recent years, will Aeroflot in this connection be able to assign a sufficient number of aircraft for accomplishing the direct shipment of foreign cargoes?

We answered this by saying that at the present time there are no problems with air transportation in this regard and in the future, should the need arise, we plan to increase the volume of shipments over the Trans-Siberian container route by this kind of service.

6904
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AIR

PROPOSED NEW ASSOCIATION TO AID INTRODUCTION OF TECHNOLOGY, MECHANIZATION

Moscow VOZDUSHNYY TRANSPORT in Russian 8 Jan 83 p 2

[Article by M. Sobolev, chief of a department of GosNII GA (State Scientific Research Institute of Civil Aviation): "On an Important Topic: Who Needs Obsolete Innovations?"]

> [Text] An article by A. Nikitin, deputy chief of GUERAT [Main Administration for Operation of Radio-Technical Equipment and Communications in Civil Aviation], entitled "Improve the Level of Mechanization" was published in VOZDUSHNYY TRANSPORT on 14 December 1982. It was devoted to problems of improving aircraft maintenance and eliminating manual labor. The article generated lively reader interest. For example, a response by I. Sumets, chief designer of Test Plant No 409, entitled "Adopt New Technology More Boldly," already was published on 18 December 1982.
>
> Today we continue an important discussion.

Of course, it is impossible to disagree with the thought of the authors of articles to the effect that a growth in the sector's aircraft inventory and an increase in the intensiveness of flights make it necessary to improve the quality of airship servicing. In essence the level of technical perfection and technological operating qualities of ground mechanization equipment has to correspond to the level of present and future aviation technology. I believe that it is only in this regard that an increase in the effectiveness of operating flying craft can be achieved.

Work on the problem of mechanizing airship servicing processes assumed a comprehensive and purposeful character in the sector from the moment specialized departments were set up in the GlavNTU MGA [Ministry of Civil Aviation Main Scientific-Technical Administration] and GosNII GA [State Scientific Research Institute of Civil Aviation] beginning in 1972.

I will tell briefly about the basic directions. This is a study of technical servicing methods and capabilities for mechanizing production processes, the creation and testing of experimental models of ground machinery, and the formation of sets of mechanization means.

In a ten-year period more than 35 new models of ground equipment for servicing airships have been created, tested and placed in operation based on requirements developed by the mechanization department of GosNII GA. The economic effect was 2.4 million rubles. What kind of equipment is this? Here is just some of it: airfield prime movers, conditioners, heaters for aviation engines and aircraft cockpits, special machines for cleaning cockpits and aircraft toilets, machines for removing ice, and so on.

Today a full products list of aircraft servicing equipment has been drawn up in practice. Some of the equipment is being made serially and being delivered to sector enterprises.

Work has been done to make up sets of mechanization equipment for servicing the new Il-86, Il-76T and L-410 aircraft. All equipment included in the set was used successfully in the phases of state and operating tests of new flying craft.

Further research and development work will be aimed above all at mechanizing those production processes in which manual labor predominates.

While the work of creating new mechanization equipment in test models on the whole is being conducted satisfactorily, the question arises as to why very necessary ground equipment is being received by civil aviation enterprises in completely insufficient amounts or is not being supplied at all. What can explain this?

I will try to answer. Previously, due to a poor production facility of the sector, a majority of orders for the creation and serial manufacture of new ground equipment were placed in enterprises of other industrial ministries, the majority of which were unspecialized in this area. And today, although the production areas of our plants have increased considerably, orders continue to be placed outside, and in a strange way. For example, a small proportion of the total amount of all development work has been placed in enterprises of Minaviaprom [Ministry of the Aviation Industry], which are distinguished by high quality in developing new ground equipment.

The trouble is that some industrial ministries have an irresponsible attitude toward deliveries of ground equipment to civil aviation enterprises. For example, to this day the Minstroydormash [Ministry of Construction, Road and Municipal Machine Building] is not making the high-pressure air heater, the aircraft cleaning machine or the self-propelled elevator which successfully passed interdepartmental acceptance tests back in the 1970's and were recommended for series production. Minaviaprom "froze" delivery of a unit for servicing high parts of aircraft, and Minelektrotekhprom [Ministry of the Electrical Equipment Industry] did the same for an extremely necessary frequency converter...

It is natural that with this attitude of the ministries toward filling MGA orders the task of improving the level of mechanization in the sector hardly will be fulfilled in the foreseeable future.

Just what are the ways for solving this problem? It would appear that a production association specialized in the design and series manufacture of new ground equipment should be set up in Aviaremont [All-Union Industrial Association for Aviation Equipment Repair] on the base of Test Plant No 85 of GA [Civil Aviation]. It would be advisable to include Test Plant No 409 and 425 as well in this association.

The highly skilled collectives of the design bureaus of these plants are fully capable of carrying on the development of mechanization equipment at a level meeting the modern development of aviation equipment and the best foreign analogues. The production capacities of these plants will provide for series manufacture of this equipment in the necessary quantities.

It is my profound conviction that only the creation of such a production association will in time permit full support of the sector's enterprises with modern ground equipment.

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AIR

BRIEFS

IL-86 WIDEBODY AIRCRAFT--GruzINFORM--A considerable part of the flying field at the Sukhumi airport has been given up by the AN's, YaK's and TU's to bulldozers, scrapers and dump trucks. Laying of the first layer of concrete on the new runway completed an important phase of renovation of the air gate to the health resorts of Abkhaziya. The airport will be the first in the Transcaucasus to receive the Il-86 airbuses. Two years ago aviators began to "build up" a new section to the runway. This was demanded by the swift development of passenger air transportation and the appearance of airbuses. Builders of Adler SU-958 of the Yuzndorstroy Trust came to the assistance of their Abkhaz friends. Looking at the gigantic field leveled by machinery and with utilities and lines already laid for the airliners, one now can appraise the scope of the work which has been done--earth, construction and drainage work--on its merits. At the end of this year the new runway will be covered with a second layer of concrete and will be placed in operation. Only small aircraft--the YaK-40, AN-24, AN-2 and L-410--will land on it temporarily. Builders will shift to the old runway, straighten it and raise it to the level of the section already created. It is planned to complete renovation in 1985 and then passenger aircraft of all types will be able to land at the Sukhumi airport and the passenger flow will increase sharply. [Text] [Tbilisi ZARYA VOSTOKA in Russian 11 Feb 83 p 4] 6904

IL-86 AIRCRAFT BASE--The capital of Uzbekistan became the second city after Moscow where the Il-86 widebody jet aircraft now is based permanently. "Our colleagues from Vnukovo, Sheremet'yevo and Ul'yanovsk helped us in training and OJT of pilots and flight attendant teams," says A. Ruzmetov, commander of the Tashkent aviation enterprise. "Five crews already have been formed from among the best specialists of the flight subunit directed by Honored Pilot of the USSR Vladimir Pan." Recently a Tashkent airbus with the side number 86052 made the first flight to Mineral'nyye Vody. It was flown by pilots 1st class U. Gazinazarov and V. Tsibyul'kin. One of the important points of socialist pledges made by Uzbekistan's aviators for 1983 thus was fulfilled: The Tashkent-Minvody-Tashkent route was transferred ahead of schedule to service by the winged giant. [By Sh. Zaynutdinov] [Text] [Moscow IZVESTIYA in Russian 3 Feb 83 p 3] 6904

QUASIELECTRONIC STATION--On the 60th anniversary of civil aviation the new "Kvant" automatic quasielectronic station will begin operation in the Main Air Services Agency of MGA [Ministry of Civil Aviation]. Its first section with a capacity of 2,000 numbers already is functioning. It was prepared for operation in close contact with workers of the Riga Production Association of VEF [Riga Order of Lenin State Electrical Engineering Plant imeni V. I. Lenin]. In the near future the "Kvant" will link more than 3,600 airports in the country and will provide passengers with 24 communications services. Significant changes also occurred in the station's servicing. Now all malfunctions arising during operation are registered automatically on a teletype tape. The new unionwide automatic communications system will permit servicing the growing flow of passengers each year considerably more efficiently. [By N. Starodubov] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 25 Jan 83 p 1] 6904

NEW BEL'TSY AIRPORT--Bel'tsy--Construction of a new airport has begun in the city environs. Modern airliners--the AN-24, TU-154 and YaK-42--will be received and dispatched here. The original air terminal building out of glass and concrete will be decorated with mosaic panels on Moldavian national themes and with decorative ornaments. In time direct air routes will connect Bel'tsy with Moscow, Leningrad, Rostov-na-Donu and other major cities in the country. The builders pledged to turn over the airport's first section next year by the 60th anniversary of the Moldavian SSR's formation and creation of the Moldavian Communist Party. [By V. Kalashnikova] [Text] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 2 Mar 83 p 4] 6904

HANGAR AUDITORIUM--The new, unique building in the center of the educational compound will be noticed by everyone visiting the Kiev Institute of Civil Aviation Engineers imeni 60th Anniversary of the USSR. It is the building of the Chair for Design and Strength of Flying Craft just placed in operation with an overall area of more than 9,000 m^2. The estimated cost of the facility is some four million rubles. It was erected by builders of the Yugozapadtransstroy Trust and Minmontazhstroy of the Ukrainian SSR. The hangar even now contains an An-24 aircraft and Mi-4 helicopter. In the near future a Tu-154, YaK-40, An-28, An-3 as well as many types of helicopters will take their places here. "With the placement of this unique building in operation it was necessary to alter the training process," says Doctor of Technical Sciences, Dean of the Mechanical Faculty V. Ushakov. "We essentially received an engineering simulator. Now people will be able to obtrain engineering knowledge to the full extent." [By V. Karpyuk] [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 12 Feb 83 p 4] 6904

CSO: 1829/130

NEW IRKUTSK RESEARCH INSTITUTE TO STUDY MOTOR VEHICLE TRANSPORT

Moscow GUDOK in Russian 14 Nov 82 p 4

[Article by G. Tarakanov, head of RSFSR Ministry of Motor Vehicle Transport's Press Center: "For the Siberian Region"]

[Text] A production-laboratory of the Eastern Siberian Branch of the State Scientific-Research Institute for Motor Vehicle Transport (NIIAT) is being established in Irkutsk.

"This is the first institution of its kind for Siberia, the North and Far East for solving motor vehicle transport problems within a given region," director of the NIIAT branch Anatoliy Mikhaylovich Borodich tells us. "The decision to organize it was dictated by the fact that recently the national economy of these regions has been undergoing intensive development. Motor vehicle transport here plays a leading role; however its use is connected with great technical and organizational difficulties due to the harsh climatic and natural conditions."

To insure that the research has a precise scientific direction, the collective of the Eastern Siberian Branch of NIIAT determined a comprehensive work plan for the 11th Five-Year Plan. Its main goal is the development of a manageable motor vehicle transport system within the context of a closed economic region. It is called upon to insure the optimum conditions for motor vehicle transport activity in the various circumstances which are encountered in practice. The territorial-production complex (TPK) as the basic form for the economic development of regions of Siberia, the North and the Far East, is such an economic region.

In spite of the specific requirements for using motor vehicle transport under harsh climatic conditions, the sector has accumulated a large scientific-information potential in this area. They are conducting research in the organization of traffic, management of operative planning and creation of a production-technical base for transport.

The primary trend in the scientific research is to compile projections for the development of motor vehicle transport for a given economic region until the year 2000. Still remaining to be worked out on the basis of their results are the transport, technical and managerial criteria of the motor vehicle transport system.

During the course of the 5-year plan, it is necessary to develop a system of freight and passenger traffic, equipment and methods for incorporating it into TPK circumstances, and to determine an efficient specialization, the capacity and the site for the enterprises and the production-technical base. Questions related to the unified mechanized process of loading-unloading operations at junctions with rail and river transport must be resolved simultaneously.

Creation of an organizational structure for managing the individual enterprises and motor vehicle transport overall requires considerable attention. It is still necessary to develop the systems for operative planning and management of freight and passenger traffic using the latest computer equipment, taking into consideration the conditions of the territorial-production complex.

A set of measures insuring the preservation of the riches of the region, the natural landscape, park zones and the purity of the atmospheric basin will be examined.

First, scientific and economic personnel are needed to implement these tasks. The development of the production-laboratory base of the Eastern Siberian branch of NIIAT will permit the industry to be supplied with highly qualified specialists. One of the means for solving this problem is seen in the creative collaboration between the branch and departments of the Irkutsk Polytechnical Institute, which prepare personnel with specialized skills for the motor vehicle industry. The fundamental departments should be made up of leading specialists of the branch, who will give lectures, conduct practical labs, and lead course and graduate projects.

As yet the local VUZes have a weak production base. They can compensate for this, using the material-technical base of the branch. At the same time, the students will be broadly attracted to scientific-research work. It is anticipated that the most current scientific and technical developments will be included in the special and profiling disciplines.

"We consider it expedient," says A. Borodich, "to form a department for raising the qualifications of supervisory personnel."

This is an important matter, for along with creating the highly developed production base of the branch, it is necessary to organize a network of model enterprises within the system of the Eastern Siberian Territorial-Transport Administration. This will make it possible to work out new manufacturing processes and traffic and management models, and to transfer them subsequently to other enterprises, taking specific requirements into consideration.

The production-laboratory base under construction is a complex of tasks and equipment realized according to plans from the Krasnoyarsk Branch of Giproavtotrans [State Institute for Design of Motor Vehicle Repair and Transport Enterprises and Equipment]. Here everything has been anticipated for the fruitful creative work of scientists and specialists who are thinking of the future of the transport system in the largest regions of the country.

9194
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ANALYSIS OF STATUS OF PRODUCTION BASE FOR ROAD CONSTRUCTION ORGANIZATIONS

Moscow AVTOMOBIL'NYYE DOROGI in Russian No 12, Dec 82 pp 20-21

[Article by A. S. Vasserman and V. V. Silkin, State All-Union Highway Scientific Research Institute: "An Analysis of the Status of the Production Base for Road-Construction Organizations of the Ministry of Transport Construction"]

[Text] The basic direction for scientific and technical progress in road construction is the path toward its industrialization, that is, the conversion of road construction into an integrated mechanized process, during the execution of which the most efficient machines and equipment, materials, designs and progressive methods are employed. The industrialization of road construction is widely associated with the efficient development of its production base, including the complex of primary, subsidiary and service enterprises.

Within the structure of the various types of enterprises included in the production base for Mintransstroy's road-construction organizations, primary enterprises comprise 41 percent of the total, subsidiary enterprises 14 percent and service enterprises 45 percent. At the present time, the number of workers engaged in the primary enterprises amounts to 54 percent of the total, at subsidiary enterprises 42 percent and at sevice enterprises 4 percent. Of the total value of productive capital at the disposal of enterprises in the production base, primary enterprises account for 70 percent, subsidiary enterprises 26 percent and service enterprises 4 percent.

It is apparent from these data that the primary enterprises occupy the predominant position in the complex of various types of enterprises.

The results of an analysis of the work of Mintransstroy's road-construction enterprises shows that 28 percent of the total number of personnel are employed at enterprises within the production base. Included in this figure are unskilled workers (33 percent) and white-collar and engineering and technical personnel (about 14 percent). The value of the fixed productive capital at production-base enterprises is 21 percent of the total value of productive capital in the budget of Mintransstroy's road-construction enterprises. These data determine the importance of the production base's role in the formation of the final results of the production economics of road-construction enterprises. According to calculations, for example, a reduction of only one percent in the number or workers employed at enterprises in the production base would make it possible to increase construction output by 0.27 percent.

Over the course of the last 10 years, the composition of the enterprises within the production base has changed quantitatively and qualitatively. The total amount of production from industrial enterprises has grown by 24.8 percent. The total number of industrial enterprises among road-construction organizations has increased by 50.2 percent. The average annual value of fixed productive capital has increased by 103 percent, while the number of personnel was reduced by 10.7 percent, including 11.2 percent of the number of blue-collar workers. This illustrates a certain tendency to eliminate manual labor and to mechanize labor-intensive processes at industrial enterprises.

The dynamics of the technical and economic indicators for the work of enterprises in the production base of Mintransstroy's road-construction organizations testify to the fact that the output per worker increased by 38.9 percent between 1970 and 1979. The amount of of capital per worker rose by 128.1 percent as the capital productivity of the fixed productive capital fell by 38.9 percent. In other words, the rate of increase in the amount of capital per worker has significantly exceeded the increase in the amount of output per worker. This has led to a considerable reduction in capital productivity.

A considerable reduction has been noted in the rate of increase of the production-efficiency indicators. This is particularly apparent in the case of the capital productivity of fixed capital at production-base enterprises in comparison with construction and installation operations. This can be explained by the fact that, in recent years, there has been considerable re-equipping of the production portion of the fixed capital at production-base enterprises. This can be seen, in particular, in the introduction of such high-output machinery as the SB-109 and the SB-118. This has led to an increase in their cost without a significant increase in output productivity.

Moreover, production capacities are not fully utilized at production-base enterprises, and equipment idle time is observed primarily within the shift. This also leads to a reduction in capital productivity. Calculations have shown, for example, that, at the present time, the average amount of work done at one paving-asphalt and concrete plant does not exceed 40 to 50 percent of the nominal output.

The majority of production-base enterprises are characterized by an insufficient concentration of production and a low level of mechanization in the loading and unloading operations. This is connected with the use of obsolete designs for stone and cement storage areas (elevated rails, cement-storage bunkers, etc.)

The increase in the production of paving-asphalt and concrete mix at plants is accomplished primarily through an increase in the number of such plants and not through an increase in their efficiency, that is, the increase in the amount of mix produced comes about through extensive utilization of the equipment. At large-scale concrete plants producing more than 60,000 cubic meters of mix annually (8 to 12 percent of the total number of plants), only 24 to 26 percent of the total volume of mix is produced.

The road-construction production base differs fundamentally from the production bases of other types of construction. In the first place, production-base enterprises basically belong to the road-construction organizations. In the second place, in connection with the linear nature of the construction projects and the requirements of road-surfacing technology, the production base must be mobile. In recent years, the importance of the latter feature of the road-construction production base has grown. This is associated with the equipping of road-construction organizations with new machine systems for concrete surfacing, particularly high-capacity systems such as the DS-100 and the DS-110.

About 45 percent of the total number of workers at production-base enterprises are engaged in high-speed road construction. This activity also utilizes about 50 percent of the value of all fixed productive capital allocated to road-construction organizations. Under these conditions, the traditional method of supplying the projects with road-construction materials and mix from fixed cement and concrete plants along the line no longer satisfies the conditions of trunkline highway construction. This is because the time required to build and fit-out road-construction production enterprises has taken more than 1 to 2 years, and their relocation to new sites has been practically impossible.

The application of high-capacity machinery and the associated three- to four-fold increase in the rate at which roads can be surfaced has required a qualitatively new approach to the organization and siting of production bases and the selection of their output, as well as to the method of accepting and storing construction materials, since high-speed construction brings about a sharp increase in the amount of recoverable road-construction materials.

Thus, one of the most important directions for the development of road construction's industrial production base is the extensive utilization of portable and mobile enterprises for the preparation of paving-asphalt and concrete mixes. The application of mobile enterprises in conjunction with an on-line inventorial storage depot makes it possible to insure: the rapid construction of surfaced roads; a reduction in the distance over which the mix has to be transported to the project using it, a condition which will positively affect the quality and the speed of the work; the creation of the necessary supplies of material at the mobile enterprises; and a reduction in the amount of motor-vehicle transport needed to ship the materials and mix.

In addition to the mobile enterprises, however, new requirements have arisen for different types of auxiliary equipment at the production base. The equipment and machinery for unloading rail cars do not insure the necessary schedule for the delivery of materials, nor do they guarantee the standards set by the USSR Ministry of Rail Transportation for railcar layovers. Unloading is primarily accomplished from elevated rails, and this leads to a mixing of the materials and necessitates additional expensive cleaning to remove impurities and sorting according to size. There has been no extensive introduction of new equipment to unload stone during the wintertime.

Silo-type concrete-storage bins have not found broad application in road-construction practice. At the present time, production enterprises are not making sufficient use of inventorial on-line cement-storage areas which would satisfy today's requirements for mobility as well as for the receiving of cement from railcars and its storage.

In an effort to eliminate these deficiencies, production, design and scientific research organizations of Mintransstroy have developed a number of measures to improve the road-construction production base.

On the recommendation of the State All-Union Highway Scientific Research Institute, techniques for road-surfacing operations as well as the organization of these operations have been developed for use with mobile production-enterprise equipment.

In recent years, the Kiev branch of Soyuzdorproyekt in conjunction with Soyuzdornii and the Kiyevdorstroy, Beldorstroy and Sverdlovskdorstroy trusts has developed and introduced a number of production bases for high-speed road construction. A modern production base permits the construction of 50 to 75 km of highway annually and is capable of producing 150,000 to 180,000 cubic meters of concrete mix and 150,000 tons of foundation mix.

Our domestic industry has begun mass-production of high-capacity machines and equipment for the preparation of paving-asphalt and concrete mix, for the unloading of stone and cement and for their interindustry transportation and delivery to mixing facilities and vehicle transport.

However, the machinery and equipment produced by industry and intended for the equipping of production bases do not always satisfy requirements for insuring the planned level of labor productivity and the quality of road construction. In particular, this concerns continuous concrete-mixing equipment, mixers and front-loaders. Until now, our domestic industry has not produced a continuous-action concrete mixer. This would satisfy road-construction requirements to a much greater degree.

A considerable increase in the rate of road construction and the heightened requirements for road-pavement and foundation quality predetermine the basic paths for improving the economic efficiency of production-base operation.

In connection with the importance of finding a comprehensive solution to the problem of developing and locating a production base for Mintransstroy's road-construction organizations, it is necessary to accelerate the development of the production of road-construction materials and structures in comparison with the increase in the volume of construction and installation operations, based on their execution in various economic regions. In this case, it is necessary to find a valid way of establishing coefficients for surpassing the volumes of road-construction material production in comparison with the volumes of construction and installation work for various rates of road construction.

We must increase the degree of concentration and specialization of the production base by reducing the number of small-scale enterprises and converting some of them into specialized enterprises which manufacture a limited range of parts and structural elements.

It would be wise to further increase the contribution of moveable paving-asphalt and concrete plants based on mobile-type paving-asphalt and concrete equipment for preparing the mixes. It is also important that we improve the methods of substantiating the location and design of various types of road-construction production enterprises depending upon the rate of road construction, the yearly volume of work, etc.

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9512
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MOTOR VEHICLE

KUTAISI PLANT TO PRODUCE NEW DIESEL TRUCK SERIES

Moscow PRAVDA in Russian 22 Jan 83 p 1

[Article by G. Lebanidze: "Kutaisi Diesel Tractors"]

[Text] The first diesel truck engine has been built at the Kutaisi Motor Vehicle Plant. A traditional product comes off the assembly line--truck tractors. Alongside rises a practically new enterprise which will produce the Kolkhida agricultural tractor-trailer rigs.

Diesel truck tractors are the result of a creative search carried out by specialists in Georgia. They were actively assisted by engineers from many related enterprises, institutes and design organizations throughout the country. During the development of these tractors, the latest achievements of domestic and foreign technology as well as the experience acquired by the leading vehicle-manufacturing plants were taken into consideration.

These trucks are noted for their economy and their ability to traverse difficult terrain. Each of them has two drive axles and an eight-speed transmission. Each such truck is capable of transporting 11 tons of freight at speeds of up to 70 kph.

Enterprises from 12 ministries are supplying complete assemblies and parts for the new tractors to the plant in Kutaisi.

The work area for the new modular truck body alone exceeds 75,000 square meters. It was built and simultaneously "stuffed" with machines and equipment delivered from Moscow, Kharkov, Minsk, Odessa, Kostroma and Gorkiy. Subcontractors competing according to the "Work Relay" principle strove to make deliveries ahead of schedule.

The collectives of related enterprises put in a great deal of work. Workers at the KamAZ plant assisted the Kutaisi workers in the installation and adjustment of the automated lines. Young Georgian installation workers learned their trade in the city of Brezhnev.

The new shop will begin producing thousands of diesel engines annually. Fitter-assemblers V. Berikashvili, G. Skhiladze, T. Gozalishvili and G. Kebadze lead in the competition for the quickest mastery of this production. The very first diesel, incidentally, was assembled by their hands.

The time is not far off when this plant will attain full output and, one after another, thousands of trucks with the emblem "KAZ" will come off the plant's assembly lines annually. Today, the steel hearts of these trucks are the 160-horsepower diesel engines which are being tested on the stands and which operate in the first experimental prototypes of this new-model truck.

9512
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MOTOR VEHICLE

LVOV PLANT BEGINS PRODUCTION OF NEW DIESEL BUS

Moscow IZVESTIYA in Russian 3 Jan 83 p 1

[Article by V. Vukovich: "A New Bus"]

[Text] Yet another assembly conveyer has appeared at the Lvov Bus Plant. On New Year's Eve, the bodies of a new model bus started moving along the conveyer--a diesel bus for transporting passengers in major cities.

The original design was developed at the Lvov All-Union Experimental Design Institute of Bus Construction, also located here. Its builders set themselves the task of making their creation satisfy current operational and comfort requirements to the maximum degree possible. The first experimental bus was tested on one of the busiest routes in Lvov.

The bus traveled 160,000 km and justified completely the hopes the designers had placed on it. The diesel engine pollutes the atmosphere to a considerably lesser degree than a gasoline engine. The pneumatic suspension keeps the floor and running boards level whether there are passengers inside or not, while the hydraulic automatic transmission installed in place of a gearbox makes the driver's job easier and makes smooth starts possible.

The two wide doors make it possible to get in and out of the bus quickly. Air vents in the wide windows together with ports in the ceiling insure good ventilation in the summertime, while the bus is kept warm in the winter thanks to a liquid heating system.

The first diesel LAZ-4202 busses have already been sent to Vladivostok, Khabarovsk, Novosibirsk, Tbilisi, Baku, Vilnyus, Dushanbe, Ashkhabad and other cities. In 1982, the first large lots of these busses will come off the plant's conveyers. A bus for suburban service is being built based on the model that has entered series production.

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MOTOR VEHICLE

NEW TANK TRAILERS FOR USE WITH KAMAZ TRUCKS

Moscow PRAVDA in Russian 21 Jan 83 p 1

[Article by Yu. Kirinitsiyanov: "The KamAZ Will Deliver"]

[Text] The Ural'skiy Mechanical Repair Plant imeni the 50th Anniversary of the Great October has begun assembly-line production of tank trailers. Powerful KamAZ trucks will be able to deliver 17 cubic meters of fuel in these tanks across sand and impassable roads.

The plant also manufactures fittings for tank trucks and stationary fuel stations for rural areas. The pride of the collective, however, is the tank trailer for the KamAZ trucks.

Sheets of thin steel lie on a rack. A winch is engaged, and the steel is bent into a roll like a common piece of paper. Blue welding sparks fly.

A welding team headed by M. Sutyagin and a crew of fitters led by V. Yakubovich mastered the production of this unusual assembly in a short period of time.

"These collectives immediately began work according to the team-contract method," noted the shop supervisor, Yu. Kononykhin. "This made it possible not only to save time, but also to monitor the quality constantly."

A test lot was sent from here to Podmoskovye and received good reviews. The plant director, S. Suleymenov, has orders from oblasts in Kazakhstan, from the BAM and from the Far East.

Up until this time, the plant had for several years been producing two-wheel trailers which could only be towed by GAZ-53 and GAZ-52 trucks. This type of tank has a rather small capacity--5 tons.

Nowadays, one high-capacity run is the equivalent of four ordinary runs. In cooperation with specialists from the Saratov branch of the Orgtekhsnab central experimental design and technological bureau of the USSR State Committee for Agricultural Equipment, a new tank trailer has been built. Many of its assemblies had been completed and perfected at the Ural'skiy Mechanical Repair Plant. We can tell you that it was chief production engineer Ye. Loktev and chief designer M. Rybalko who suggested that a metal pipe section be used to replace the special tanks. Thanks to this suggestion, more than 4,000 rubles are saved for each 100 trucks.

The mark of quality has been awarded to the so-called breather valve for the tanks, and not long ago the workers in the Urals found out that the measurement port has also received the distinguished pentagon. The plant workers are prepared to labor even harder, but they face difficulties.

"According to the plan, we are to manufacture 150 tanks annually, but we could make twice as many," said S. Suleymenov. "Because of the lack of flatcars, the two-wheeled trailers from Krasnoyarsk do not arrive regularly."

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BRIEFS

NEW ROW-CROP TRACTOR--Minsk--Government tests have been successfully completed on an all-purpose row-crop tractor--the MTZ-100, built by the Minsk Tractor Plan imeni V. I. Lenin. The engine's output is being increased considerably and the operator's working conditions improved. It has been decided that the production of these tractors in factories be mastered in stages. The designs built into the new model will be incorporated in the MTZ-80 tractor now in production. The first lot of hundred-horsepower tractors is slated for production in the final year of the five-year plan. [Text] [Moscow GUDOK in Russian 11 Jan 83 p 1] 9512

HIGH-CAPACITY REFRIGERATOR TRUCKS--Tiraspol--The Tiraspol Trailer Plant has begun assembly-line production of "refrigerators on wheels." The capacity of such refrigerator trucks exceeds 20 tons. Our TASS correspondent reports that this high-capacity truck is being built in cooperation with design institutes in Lvov, Odessa, Kiev and other cities throughout the country. Belorussian vehicle manufacturers deliver the tractors to Tiraspol. Collectives from the Volzhskiy Motor Vehicle Plant and the Kama Motor Vehicle Plant are likewise providing parts for these trucks. By the end of the five-year plan, when the production of these new trucks reaches the planned output, the number of trucks manufactured will exceed 1,000. The development of refrigerator-truck production will make it possible to solve the problem of delivering produce to the country's industrial centers. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Jan 83 p 2] 9512

ASSEMBLY-LINE ROBOTS--Industrial robots built by a research plant of the Minsk Design and Technological Research Institute of the automobile industry and installed on a new automated line combine the functions of fitter-assemblers and checkers for the technical inspection department. The line is intended for the Kama Motor Vehicle Plant. Here the mechanized assistants will put together assemblies for powerful truck motors, eliminating manual labor entirely. They are equipped with special devices which, after each operation, check the quality of execution, thus eliminating rejects. "The application of robots has opened up new possibilities for automating assembly operations in which a great many people in the industry are now engaged," said M. Ye. Makhanek, the director of the institute. "There are about 100,000 fitter-assemblers working in our sector of industry alone. In addition to developing assembly-line machines and equipment for machine-tool manufacture, we are making high-capacity lines and incorporating the most modern ideas in them. As a result, the time needed to introduce new technology is being reduced sharply." There are several lines in operation at the Kama Motor Vehicle Plant which have demonstrated a higher degree of productivity than similar imported lines.

Experts from the institute are now designing equipment for the Minsk Motor Vehicle Plant, where an assembly building for a new series of heavy-duty tractor-trailer rigs is under construction. The majority of operations on the conveyer lines will be carried out by automated manipulators and other devices. [By V. Sverkunov] [Text] [Minsk SOVETSKAYA BELORUSSIYA in Russian 12 Jan 83 p 1] 9512

IMPROVED TRUCKS--Saransk--A plant which produces dump trucks for the AvtoGAZ production association has switched over to the manufacture of GAZ-SAZ-53B trucks. These trucks are well suited for the transport of agricultural freight. This type of truck, which can be unloaded from three sides, will have its cargo-carrying capacity increased from three and one-half to four tons in just the next few weeks. This truck will be used only with trailers that dump in the same manner that the truck body does. The truck body and the trailer can transport 9 tons of cargo at one time. This means that the total carrying capacity of the trucks produced annually in Saransk will increase by a factor of 2.5. The use of air-cooled diesel engines instead of gasoline engines will also result in a great saving for the national economy. Several such trucks have already been built. They are now undergoing testing at the vehicle proving grounds. [By A. Shiryayev] [Text] [Moscow PRAVDA in Russian 19 Jan 83 p 1] 9512

NEW ROAD CONSTRUCTION--Moscow--The board of the RSFSR Ministry of Highways held an expanded joint session together with the Presidium of the Central Committee of the Union of Vehicle Transportation and Highway Workers. In the past year, highway workers in Russia have built and placed into service 9,837 km of paved highway. Of this total, 3,933 km of paved highway have been constructed in the nonchernozem region of the RSFSR. More than 60 km of highway have been placed into service in regions of the Western Siberian oil-and-gas complex. A total of 22 rural district centers and 546 kolkhoz and sovkhoz central farms have received additional reliable connections with the basic highway system. These figures were presented in the report of A. A. Nikolayev, the RSFSR minister of highways. The socialist obligations for the third year of the five-year plan were examined and unanimously adopted at the session. [By A. Rivkin] [Text] [Moscow STROITEL'NAYA GAZETA in Russian 4 Feb 83 p 3] 9512

HIGH-SPEED ELECTRIC CAR--Kharkov--The student design bureau of the Kharkov Highway Institute has already constructed the third model of the record-breaking Khadi-21E racing car. It weighs a half-ton, and its estimated speed is more than 250 kph. It is larger than its predecessor, the Khadi-13E electric car, which holds two world speed records and one all-union record for automobiles of this type. This speed is achieved through the use of two powerful electric motors fed by silver-zinc batteries. At the present time, a group of students led by A. Gevorgyan, director of the laboratory for high-speed automobiles, and senior engineer Yu. Stebchenko are preparing the Khadi-21E for trials this summer. This group is doing parallel work on the creation of a multipurpose tandem bicycle, a two-seat family microbus and a sports runabout. [By V. Pavlenko] [Text] [Moscow IZVESTIYA in Russian 10 Feb 83 p 3] 9512

TRUCK OVERHAULING FOR BAM PROJECT--Severobaykal'sk (GUDOK correspondent)--The first truck to be given a major overhaul has emerged from a new BAM [Baykal-Amur Mainline] enterprise, the central mechanical and maintenance shop of the "Nizhneangarsktransstroy" trust. Here they give a second life to worn-out "Magirus" trucks. The BAM truck repair plant went into operation one-half year earlier than planned. "They are still installing equipment in the workshops," says V. Koval'chuk, head of the facility, "but, considering the critical need, we have already started production." [Text] [Moscow GUDOK in Russian 31 Dec 82 p 4] 9194

YAROSLAVL' HIGHWAY OPENED--Yaroslavl' (TASS)--The most remote northern regions of the Yaroslavl' Nechernozem'ye have received reliable transport connections with the oblast center and other cities in the oblast. Builders of "Yaroslavl'-avtodor," having fulfilled their pre-October obligations ahead of schedule, have opened the last section of the main highway from Yaroslavl'--Uglich--Nekouz--Breytovo, a nearly 60-kilometer section. Vehicles with freight for kolkhozes and sovkhozes and building organizations set out yesterday along the new asphalt highway. [Text] [Moscow TRUD in Russian 12 Oct 82 p 2] 9194

ROAD CONSTRUCTION IN TYUMEN'--ETA [Estonian Telegraph Agency]--Workers of the "Estsurgutdorstroy" trust of the republic's Minavtoshosdor [Ministry of Motor Vehicle Transport and Highways] have satisfied their socialist obligations in honor of the 60th anniversary of formation of the USSR ahead of schedule--almost 2½ months before the end of the year, laying roads in the oil and gas region of western Siberia. This fact is reported in the highway worker collective's report to the Central Committee of the Estonian Communist Party. On the eve of the 65th anniversary of the Great October Revolution, they made available to the oil- and gasfield workers of Tyumen' oblast about 18 kilometers of highways with hard surfaces, the most recent to be opened this year. The envoys from our republic at the same time opened 30 kilometers of modern highway routes which were planned for 1982 for heavy cargo traffic. This great labor victory is the result of the selfless labors and joint efforts of highway builders, workers from plants of the republic's Minstroy [Ministry of Construction], who manufactured the reinforced concrete slabs for the Siberian highways, and transport workers from the Estonian division of the Baltic Railroad. [Text] [Tallinn SOVETSKAYA ESTONIYA in Russian 27 Oct 82 p 1] 9194

BRIDGE OVER VOLKHOV RIVER--Novgorod--A large new bridge over the Volkhov River was opened to traffic. The new bridge, replacing the ferry service in the region of the village of Selishchi, will not only appreciably shorten the automobile route, but will also provide consistent year-round service for the farms of Chudovskiy, Malovisherskiy and other rayons. [By V. Troyanovskiy] [Text] [Moscow IZVESTIYA in Russian 15 Nov 82 p 6] 9194

AN ECONOMICAL TRUCK--Gor'kiy (GUDOK correspondent)--The first group of trucks of modified design have come off the assembly line of the (Gor'kiy) Motor Vehicle Plant. The GAZ-53-12 differs from its predecessors by virtue of greater load-carrying capacity and speed, better off-the-road capabilities and reliability in operation. Its load-carrying capacity is one-half ton greater than the GAZ-53A. These half-tons will achieve a significant savings in monetary resources, materials and fuel for the national economy. In the new GAZ model, a stronger motor has been used, and the motor potential has been improved by 50,000 km as compared with the earlier model. The design of such important components as the rear-axle assembly, gear box, frame, etc. has been improved. The new GAZ model has been awarded the state Mark of Quality. The first group of GAZ-53-12 trucks has been dispatched to Kazakhstan from the plant's sidings. [Text] [Moscow GUDOK in Russian 28 Dec 82 p 4] 9194

CSO: 1829/120

RAILROAD

GIN'KO RESPONDS TO COMPLAINTS ABOUT LACK OF REFRIGERATOR CARS

Moscow GUDOK in Russian 11 Dec 82 p 1

[Article by V.N. Gin'ko, deputy minister of railways: "Refrigerator Cars Will Travel Faster. The USSR Ministry of Railways Responds to the Article 'Why Refrigerator Cars Are Standing Idle'"]

> [Text] To speed up the movement of cars with perishables, the traffic schedules for 1983-1984 envisage a significant increase in the number of specialized trains to transport perishable at high speeds. It has been decided to use the free times in the passenger train schedule on the main lines to let through-trains proceed which have loaded refrigerator cars. It has also been decided to couple individual cars with the most valuable perishables to passenger trains. In addition, it has been planned to send empty refrigerator cars by through-trains, as a rule, to the railroads where there will be large-scale loading of perishables. To accomplish this, special tracks have been set aside at a number of classification stations.

The USSR Ministry of Railways examined the materials in the combined investigative articles of 16 September in GUDOK (No 212) and IZVESTIYA (Nos 258, 259). The articles pointed out shortcomings in operation and maintenance of refrigerator cars. The ministry notes that transport of perishables is extremely uneven during the various periods of the year. During the autumn procurement of fruits and vegetables and mass slaughter of livestock, the railroads experience a shortage of refrigerator cars. But during the first quarter of the year, a portion of the refrigerator cars are set aside in the Ministry of Railways' reserve. It would not be expedient to use these cars to ship other freight, since the railroads do not experience a shortage of box cars during that period of the year. Therefore, in the first quarter of 1983, we are planning to set aside a large portion of the idle refrigerator cars in the Ministry of Railways' reserve near stations to whose depots they are assigned. This will make it possible to use their crews to repair rolling stock.

The newspapers correctly raise the issue about large losses of freight-loading resources resulting from lengthy hold-ups of refrigerator cars during freight operations. The Ministry of Railways is taking measures to put pressure on recipients of perishables who regularly allow these cars to be delayed during loading operations. At the same time, tasks have been established, starting in October 1982, for shipping meat and dairy products to Moscow and Leningrad based on the ability of the recipients to accept the shipments. These tasks were established jointly by our ministry and the USSR ministries of trade, meat and dairy industry.

To assure that refrigerator rolling stock is technically prepared for massive transport of the 1983 harvest, we are planning to repair 24,000 cars, using the maintenance resources of depots and plants.

Taking into account the experience of past years, the practice of providing technical assistance to the areas of massive perishable shipments will be expanded. To this end, 12 repair cars will be dispatched to the railroads, special repair crews have been set up, mobile equipment trains have been organized and the necessary spare parts and materials for equipment have been set aside. To equip refrigerator cars right at the loading point, in 1983 we are planning to set aside an additional 25 fuel trucks, 200 diesel generators and 200 refrigeration units.

Together with the Ministry of Heavy and Transport Machine Building, we have planned to set up five additional warranty repair points for refrigerator cars and to manufacture four new repair cars.

To support the ever-increasing transport volumes of perishables, the pool of refrigerator folling stock will be reinforced each year with new refrigerator cars.

9887
CSO: 1829/115

RAILROAD

RAIL DIRECTORS URGED TO ACT AGAINST THEFT, LOSSES OF GOODS IN TRANSIT

Moscow GUDOK in Russian 11 Nov 82 p 2

[Text] Organizational and technical measures are being implemented on the railroads, directed towards safekeeping of freight and strengthening the struggle against poor management and thefts of materials during transport and storage. The measures which were taken enabled us to reduce somewhat the losses resulting from failure to protect freight. In 1982, such losses were reduced on 27 railroads. More than 76 percent of all stations are operating without freight losses. The Tselina, Belorussian, Donetsk, Southwestern and Dnepr railroads have attained the best results.

However, the situation continues to be unfavorable. Losses have even increased on the Lvov, North Caucasus, Volga, Northern and Baykal-Amur railroads. There have been many instances of freight thefts on the Central Asian and Alma-Ata railroads.

There are still cases of automotive and agricultural equipment being disassembled. A great many losses are permitted during transport of perishables, paper, as well as freight delivered in containers and small shipments.

As before, many stations are violating the requlations for accepting and issuing freight. There are still instances of incorrect determination of weight and number of spaces. There are also violations of transport regulations for loading and accepting freight in non-standard packaging. Transport documents are being drawn up incorrectly and carelessly.

A number of railroads have not implemented necessary measures for increasing the level of shipping motor vehicles and tractors on through-trains. The struggle against separation of freight from shipping documents, against halting trains at intermediate stations is not being waged properly in all places.

Progressive work methods for merchandise inspection points are being poorly implemented on the South Urals, North Caucasus, Volga, Azerbaijan, Lvov and several other railroads. Work is lagging behing for fencing in and improving the lighting of freight facilities, for equipping these facilities with protective and fire alarm systems, as well as for establishing transit procedures.

Shortcomings in documentation and claims work are slowly being eliminated on the Oktyabr'sk, Lvov, Baltic, Modavian, Azerbaijan and Alma-Ata railroads.

The minister of railways has obliged the chiefs of the Ministry of Railways' administrations, the directors of railroads, divisions and territorial industrial rail transport associations to take measures without delay to eliminate the shortcomings in this matter. These shortcomings were pointed out by the CPSU Central Committee's Party Control Committee, the USSR People's Control Committee and the Ministry of Railways during inspections on the railroads.

9887
CSO: 1829/115

RAILROAD

RESEARCH INSTITUTE OFFICIALS ON PROJECTED RAIL CAR IMPROVEMENTS

Moscow GUDOK in Russian 9 Dec 82 p 2

[Interview with candidate of technical sciences Aleksandr Ivanovich Loginov, chief of the Research and Development Branch for Freight Car Designs in the All-Union Scientific Research Institute of Railroad Car Building, and candidate of technical sciences Sergey Alekseyevich Sapozhnikov, chief of the Thermal Engineering Laboratory, by GUDOK correspondent S. Khummedov: "The Freight Car of the 12th Five-Year Plan"]

> [Text] In the Food-Supply Program accepted at the May (1982) Plenum of the CPSU Central Committee, it was written: "We must improve the structure of the freight car pool being used to transport agricultural goods and food." The editors have requested that the All-Union Scientific Research Institute of Railroad Car Building discuss what is being undertaken to resolve the assigned task. Answering the questions of our correspondent are candidate of technical sciences Aleksandr Ivanovich Loginov, Chief of the the Research and Development Branch for Freight Car Designs, and candidate of technical sciences Sergey Alekseyevich Sapozhnikov, chief of the Thermal Engineering Laboratory.

[Question] Aleksandr Ivanovich, the institute has been studying the development of specialized cars for a long time, and your branch has had a leading role in that study. What sort of innovations have been devised in recent years? What are you proposing for the transport workers in the Five-Year Plan?

[Answer] Many models of specialized rolling stock were created during the last Five-Year Plan. Special cars for transporting grain, mineral fertilizers and other dry cargo are being produced. All-metal box cars, in which a lot of agricultural products are transported, are being manufactured. A batch of 2-tiered cars for transporting cattle has been produced. The 2-tiered cars can hold 1.5 to 1.8 times as many cattle as current cars.

[Question] What sort of new specialized cars for transporting food and agricultural goods will the transportation system receive in the next few years?

[Answer] The proportion of specialized rolling stock will increase to approximately 24 percent by 1985, compared to 17 percent at present. By 1985, most of the grain will be transported solely in special cars. Moreover, there will be hopper cars with highly efficient automated unloading systems for transporting flour on our country's railroads. A tank-car with an improved design has been created for transporting powdery substances, including powdered mineral fertilizers. The tank-car is equipped with three hatches, which will enable us to reduce car idleness during unloading operations.

[Question] Please tell us, how do designers take into account the actual operational conditions of rolling stock and what is being done to assure the safekeeping of freight?

[Answer] One of the basic advantages of specialized cars is that they assure the safekeeping of freight being transported. By increasing the number of such cars, we will be able to sharply curtail losses of agricultural products during transport.

A new system of seals, which cannot be opened from the outside, for the upper and side hatches on box cars has been developed. We are also studying the possibility of installing code-locks.

[Question] What kinds of problems has the institute run into while developing the designs of cars for transporting agricultural goods? Do you have an complaints about the people who operate the specialized rolling stock?

[Answer] Yes, we have a number of complaints. Our main problem is that the effectiveness of using special cars has been reduced, due to certain enterprises being unprepared to work with the cars. According to our information, 2-tiered cars are being used as one-tiered cars on some railroads, due to a lack of devices for loading cattle onto the second tier. When fertilizers are being unloaded from hopper cars, mounted vibrators must be used. But, for some reason, our customers prefer sledge hammers. As a result, the bodies of many cars are being damaged.

We must frequently remind that operation of specialized rolling stock requires a constant concern by the railroad workers for the cars and the strick following of all instructions relating to car operations. But in actuality, such rules are often disregarded. Thus the cars go in for maintenance ahead of schedule. Matters are particularly bad with the ARVs [Independent Refrigerator Car]. But, I think that it would be better if Sergey Alekseyevich Sapozhnikov spoke about that.

[Question] Sergey Alekseyevich, what is your opinion about this matter?

[Answer] The ARV is one of the most complex types of rolling stock. Unfortunately, the railroad workers can't boast of a proper attitude towards the ARV. About one-third of the independent cars are "in the shop," as the saying goes, or are being operated as "thermos-cars." This is a result of the repair enterprise being poorly supplied with spare parts. It is also a result of the poor organization of maintenance for refrigerator cars in the opertional process.

[Question] What sort of new refrigerator rolling stock is the institute ready to propose to the transportation system?

[Answer] At present, we are working with a number of organizations to develop and put into production "sandwich"-type cars. These new cars use the so-called poured insulation which forms a single unit with the exterior and interior sheathing and becomes the supporting element of the structure. The "sandwich" car has many advantages, compared with the batch-produced car. The main advantage is that the car's body is maintenance-free for the entire service life of 28 years. It is also important that the "sandwich" car has an increased load capacity of 120 cubic meters, has improved thermal engineering qualities and is more air-tight. So far, the first experimental model has been produced at the Bryansk Machine Building Plant and has successfully passed all tests. There will be additional research in the future. We believe that the future belongs to the "sandwich" cars.

In accord with an order from the Ministry of Railways and the Ministry of the Fish Industry, we have developed a 2-car section for transporting live fish. The section has 2 tanks and equipment for cooling, circulating and aerating the water--that is, enriching the water with oxygen. Live fish can be transported with practically no losses.

[Question] There is a lot of talk now about the "re-birth" of ice cars. What is your point of view on this matter?

[Answer] Ice cars are being remembered because of their simplicity and the shortage of individual insulated cars. But returning to ice cars now would be a step backward. It would be more far-sighted to build cars with liquid nitrogen cooling, in which thermal sensors would operate when the temperature of the freight rose above the prescribed level, and the necessary dose of liquid nitrogen would be injected into the freight compartment. The liquid nitrogen would vaporize, thus lowering the temperature of perishable goods.

There would not be any serious difficulties encountered in manufacturing such cars. But the Ministry of Railways must determine a possible area for using the cars and must set up stations in the area for refueling the cars with liquid nitrogen. Moreover, introduction of thermos-cars now might result in a large savings in the national economy. According to data from the VNIIZhT [All-Union Scientific Research Institute of Railroad Transportation] and the Ministry of Railways, approximately one-third of perishable goods can be transported only if protected from the effects of the environment. Therefore, in my opinion it would not be expedient to return to using ice cars.
9887
CSO: 1829/116

RAILROAD

OFFICIAL COOPERATION SOUGHT IN INTRODUCING RAIL CAR HATCH SEAL IMPROVEMENTS

Moscow GUDOK in Russian 7 Dec 82 p 2

[Article by Z. Voyenkova, senior engineer in the Kemerovo Railroad Transport Conditions Division: "Introduce the New More Quickly"]

[Text] During the last two years, there have been many proposals about developing all kinds of hatches and devices to provide higher quality sealing of rail cars: new metal and plastic seals, tank-car locks, rings instead of screws, metal plates. All of this has enabled a certain degree of improvement in safe-keeping freight in transportation.

But it is too bad that many of the innovations which have been introduced were not coordinated with USSR arbitration officials. As a result, quite often the responsibility for freight shortages is placed on the railroad by local arbitration organs, even though the recipient was given exactly the amount of freight that was loaded in the car by the sender.

For example, let's take roof hatches. According to paragraph 1a section 3 of the specifications, before beginning to load goods, senders are supposed to secure hatches by using a wood beam with a wire strap. Roof hatches are to be secured by using double-thread wire with a diameter of at least 4 millimeters. Often, this is not done. Moreover, sometimes the hatches are not sealed specially. And when the loaded car is brought out onto the electrified tracks, the freight inspector can't detect the loading violation: personnel safety rules forbid him to climb onto the car.

When the car arrives to be unloaded, the recipients first climb onto the roof of the car to check the hatches. And if even one of the hatches is open, a committee is set up to unload the freight. When the carrier's statement is drawn up, it must indicate that a hatch was not fastened.

The recipient will then file a claim against the railroad, even though the sender is at fault. If the railroad refuses to pay the claim, the recipient will appeal to arbitration, where the suit will be settled in favor of the recipient, since the requirements of the above-citied paragraph are empty words as far as arbitration is concerned.

Or take another example. Metal plates have been used since December 1981. They are very useful. But neither the recipients nor the arbitration organs recognize the plates. And even though a screw with a plate is in good working order so that even a blind man could tell that there is no access into the car, the freight must be unloaded by a commission since there is no seal. As a rule, a shortage is revealed: the sender loaded less than was shown in the documents. However,, the railroad bears the responsibility. Of course, it is offensive to have to pay for someone else's bad faith. But the main thing is that the real culprit has not been exposed, thus a loophole remains open for cheaters.

We support the proposal of the Orenburg Station workers about the necessity of putting the sender's marking on the plate. Of course, this would only be on the condition that the arbitration officials recognize both the plate and the marking.

And I would also like to say that the new sealing vices, which have been tested on the railroads and found to be handy, are being introduced very slowly. The proposed cam vices are light, handy and reliable in operation. They should be supplied, first of all, to the railroads in Siberia and the East, where the winters are harsh and where the freight inspectors are having a hard time working with the existing cam vices.

9887
CSO: 1829/116

NEED FOR MORE, BETTER QUALITY RAIL NOTED

Moscow GUDOK in Russian 2 Dec 82 p 2

[Article by VNIIZhT [All-Union Scientific Research Institute of Railroad Transportation] collaborators A. Velikanov, L. Krysanov and Ye. Shur, Moscow: "Tomorrow's Rails"]

[Text] Rails are the basic elements of the upper track structure and are the foundation of railroads. To a large extent, fulfillment of transportation's main task--complete and timely satisfaction of the national economy's and the populace's transportation needs--depends on the reliability of the rails. But, with the current volume of traffic and loading, the stability of normal rolled rails, which have not been subjected to special strengthening methods, is no longer satisfactory for the operational conditions on many rail lines.

The problem of improving the rails' capacity for work is worrying both metallurgists and railroad workers. A special inter-departmental rails commission is studying this problem. Each year, the commission gathers at one of the rail-rolling plants. But, despite the achievements which have been made in this difficult matter, many issues are still unresolved.

First of all, the metallurgists are not fulfilling their planned deliveries. As a result, on a significant portion of the railroad network, rails are being used whose standard usage has expired. It is precisely in these areas that track defects are most common and that threats to the safety of train traffic appear.

The problem of increasing the stability of rails must be resolved simultaneously with an increase in deliveries of rails. Down through the years, scientific research conducted by the VNIIZhT, the Ukrainian Scientific Research Institute of Metals, the Urals Scientific Research Institute of Ferrous Metals and by other institutes and rail-rolling plants has shown that the most radical method for increasing the service life of rails is to temper the rails by heat treatment along the entire length of the rail.

The bulk tempering of rails in oil has been put into wide use. As early as 1966 at the Nizhiy Tagil Metallurgical Combine (NTMC) and in 1979 at the

Kuznetsk Metallurgical Combine (KMC), shops were established for bulk tempering. Over the course of 15 years, the Nizhniy Tagil Combine produced more than 7 million tons of heat-tempered rails which were laid on approximately 60,000 kilometers' worth of main lines.

By introducing heat treatment to strengthen rails, the operational stability of the rails increased by one and a half times. A large economic effect was attained by increasing the service life of these rails, by saving metal and reducing expenditures for track maintenance. The bulk-tempered rails produced in Nizhniy Tagil were awarded the State Symbol of Quality.

The heat-treatment shops for bulk tempering the rails at the NTMC and KMC have a rather large work capacity, but they are not able to satisfy the ever-increasing transportation demands. But, the "Azovstal'" [Azov Metallurgical Plant] is still continuing to produce only the regular rails, because construction and start-up of a heat-treatment division for tempering by high-frequency current have been delayed. The heat-treatment division was supposed to produce its first output last year, but to date, it has not gone into operation.

The metallurgists are also disrupting fulfillment of another measure planned in numerous orders and directives: a sharp increase in production of R75 type heat-strengthened rails. The R75 rails are the heaviest, and most importantly, the most long-lived type of rails. But these rails are not being rolled at the NTMC or the KMC. Only the "Azovstal'" Plant is producing R75 rails, and naturally, they are not tempered yet.

To increase the service life of rails, it is important that the proportion and quantity of dangerous non-metallic inclusions in steel be reduced. The inclusions cause cracks and other defects to appear. This problem can be solved by implementing the optimum variant for deoxidizing or refining rail steel. The problem could also be solved by extensive application of selective metallographic and total non-destructive monitoring of the purity of rail steel.

Thanks to the combined efforts of the metallurgists and railroad workers in this matter, definite successes have been attained. By developing and introducing new production processes for deoxidation, rail stability has increased and the quality of rail surfaces has improved.

However, one cannot say that all the reserves for improving quality have been utilized. In particular, a positive result is achieved by degassing the rail steel and by smelting it in electric furnaces. Both of these methods are widely used in other countries, but they are not used in domestic metallurgy. The same is true of total non-destructive monitoring, which enables one, within allowable limits for defects, to classify rails according to their degree of contamination with non-metallic inclusions. This makes it possible to lay the higher-quality rails on the track sections with the heaviest freight traffic, as well as on small-radius curves.

The ever-more complex work conditions on the tracks, particularly on the critical lines where more than half of all transport is being handled now, have led to the fact that the rate of increase for rail efficiency is lagging behind the constantly increasing intensity of track usage. This has happened despite the fact that when heat treatment was introduced, the freight transported over the rails increased from 500 to 750 million gross tons. These rails have already ceased to satisfy the heaviest contemporary and long-term operational demands.

Therefore, a very important task for scientists and production workers is to devise high-strength rails designed to carry 1 to 1.2 billion tons of freight. Such rails would be 2 to 2.5 times as stable as rails which have not undergone heat treatment. The chemical composition of the steel and the heat-strengthening method have been chosen. We must quickly prepare an experimental batch of high-strength rails and conduct their operational tests.

At the same time, the organizations of the Ministry of Ferrous Metallurgy must speed up development of other methods for producing high-strength rails. There are plans for double-layer rails made out of nitride-strengthened steel that have been double-tempered, and subjected to isothermal tempering.

However, a certain amount of time is needed for all this. Thus, one of the most important tasks for today is to make effective use of the resources allocated for the Ministry of Railways. The most stable rails must be directed to the most complex operational conditions.

Sorting the rails according to quality has had a positive result. The rails are being laid depending on the specific conditions of the plan and the contour of the section. This experience must be extended. Good results could also be obtained by burnishing the rails in the tracks. Of course, this would be done while strictly observing the technical procedures for this process.

During recent years, there has been a sharp increase in the formation of defects in joints. In conditions of increased axle loads, we must switch more quickly to six-hole lengthened fish-plates, rather than four-hole, to assure normal rail operation in the joint area. We must also increase our attention to routine maintenance of joints.

There are other potentials for improving the use of rails on the railroad network. It is important that we bring these reserves into action as quickly as possible. That will enable the track facilities to cope successfully with the assigned task to support the planned volumes of transport in the 11th and succeeding Five-Year Plans.

9887
CSO: 1829/116

RAILROAD

UDC 624.191

CONSTRUCTION OF LONG TUNNELS ON BAM RAIL LINE

Moscow TRANSPORTNOYE STROITEL'STVO in Russian No 1, Jan 83 pp 17-19

[Article by R. I. Kasapov, chief engineer of BAM tunnel construction, and N. M. Rennert, chief of engineering department]

[Text] The Baykal-Amur Mainline Railroad includes eight mountain railroad tunnels. Two of them--the Baykal, with a length of 6.7 km and the Severo-Muysk, with a length of 15.3 km--are of special interest.

The main method of constructing these tunnels in rock is the mining method. In this case driving is carried out for the total cross-section, with the exception of individual sections with extremely complex geological situation (tectonic faults with large influxes of thermal and cold water). Mining the face for the total cross-section permits the use of high-performance equipment, a sharp increase of rates and a reduction of the laboriousness of tunnel construction.

The experience of organizing the work in construction of the Baykal tunnel is of interest in this regard. It is located in a mountain region and passes under the Davan pass of the Baykal ridge. The climate is sharply continental with a prolonged severe winter, when temperature reaches -55°C, and with a short hot summer with temperatures up to +40°C.

In the tectonic sense, the tunnel is located in a deep fault zone or in the so-called Davan zone of crush. The rock in the fault zones is severely cracked and frequently fractured. The thickness of these zones is from 1 to 100 meters. The range of strength coefficients of the rock is from 2 to 10. The weakest rock is encountered in fractured zones, where fracture-vein water with hydrostatic pressure of 0.6-1 MPa is encountered. The water flows reach 100 m^3/hr. The temperature of the ground water is from 3 to 10°C. The seismicity of the region where the tunnel is located is 9.

A test transport-drain adit of the same length travels parallel to the main tunnel. The distance between the tunnel and adit axes is 15 meters, the cross-sectional area of the main tunnel is 60 m^2 and that of the adit is 18 m^2

The tunnel has a fall toward the western entry. Finishing is of cast-in-situ concrete and reinforced concrete (Figure 1, a) and in some sections is of sprayed concrete (Figure 1, b).

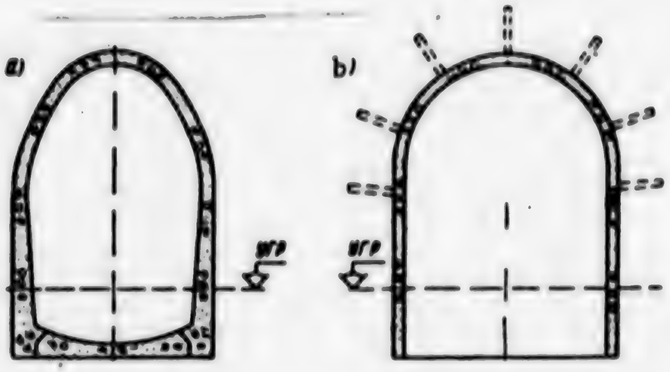

Figure 1.

The Baykal tunnel is being constructed from the two entrances and also from the faces from the shaft at Davan pass and from two additional faces from the adit. Driving operations were begun in 1977 and were completed in January 1981. Concreting of the casing proceeded parallel to driving operations. The average rate of driving the main tunnel was 80 m/month, that of driving the adit was 80 m/month and the maximum rates reached 138 and 115 m/month, respectively. These are the highest indicators in Soviet practice of mountain tunnel construction.

These high rates are explained not only by the adopted engineering and geological conditions, but also by the use of modern progressive technology, worked out carefully in all details of organization of work for separate main and auxiliary operations, selection of optimum types of temporary timbers, trouble-free operation of the machines and mechanisms and complete coverage of underground work by brigade contract.

Because of the skillful use of modern types of temporary timbering (arch, anchor and mesh and sprayed concrete) and combinations of it over the entire length of the route, driving was carried out for the total cross-section, which made it possible to achieve above-plan rates of tunnel construction.

Construction is organized in four 6-hour shifts. Furukava and Brocke drilling rigs and heavy-duty PNB-3D rock-loading machines operated at the faces, MoAZ dump truck-trains were used to transport the rock (large-capacity self-loading VPK-7 rail cars were used in the main tunnel and VPK-10 cars were used at the adit) and bulldozers were used to collect the rock after blasting. Shot holes were drilled for the anchor bolts with the BGA-1 bit from the SBU-2K installation installed on the top platform of the drilling rig. Saga-Kogio portable metal sliding forms and Fusso and Skrew-Crete pneumatic concrete laying machines were used in concreting the permanent casing. This high-performance equipment made it possible to essentially eliminate manual labor.

The role of the advanced test transport-drain adit should be especially emphasized. The draft for organization of construction provided for driving the adit 500 meters in advance of the tunnel face to study the engineering-geological situation of the mountain massif and to drain the tunnel face. A new scheme for organization of work was proposed by Bamtonnel'stroy to accelerate construction. Oblique drives were driven from the adit to the axis of the main tunnel. Thus, two additional faces were opened (Figure 2).

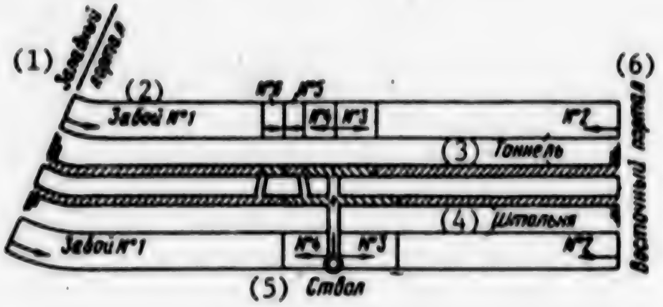

Figure 2

Key:

1. Western entrance
2. Face
3. Tunnel
4. Adit
5. Shaft
6. Eastern entrance

However, in this case the scheme for ventilation of mines and new faces ceased to correspond to the safety rules and production sanitation, which required that an essentially new scheme of non-shaft ventilation be worked out by the specialists of Bamtonnel'stroy and Bamtonnel'proyekt

Development of a process flow diagram for sequential construction of a series of underground galleries of different cross-section (adit, oblique manway and main tunnel) with a single face required that the small Furukava drilling rigs be redesigned with adjustable height of the top working platform.

The Baykal tunnel was turned over for track laying at the end of 1982, i.e., one year ahead of the established deadline.

The Severomuysk tunnel, the longest in the USSR, is being constructed under exceptionally unfavorable engineering and geological conditions. Here, the same as in the Baykal tunnel, a parallel test transport-drain adit is being constructed.

The tunnel route is located in the Baykal rift zone, to which high seismic activity is inherent: 9 units from the east and 10 units from the west. A total of 2,500 earthquakes of different energy classes has been recorded in the tunnel zone since 1962.

It was pointed out in the preliminary design for construction of the Severo-Muysk tunnel, specifically on the "erosion" and tectonic fault sections, that very complex geological and hydrogeological conditions should be anticipated (significant fracturing of intersected rock, large water influxes with possible flow of thermal and delivery water and increased mountain pressure). These conditions were mainly confirmed upon driving from the direction of the entrances. When "erosion" of the adit was intersected, the influxes of ground waters were considerably higher than predicted (100-150 m^3/hr according to the plan and 500-700 m^3/hr in reality). The water flow reached 25,000 m^3/hr at the western entrance from the Angarakan "washout" in September 1979 at the moment of a sudden discharge of water-sand pulp.

Preliminary engineering and geological surveys established that the Severo-Muysk tunnel lies in massifs with ancient geological structures, broken by fractures of the earth's crust, along which the blocks now move. Data obtained during test drilling and driving of the advance adit differ from the forecasts of geologists. It should be recognized that geologically the tunnel route has been very weakly studied, especially its central part approximately 8 km long.

The variety of engineering and geological conditions on the tunnel route of such great length and the sharp transitions from monolithic rock to loose, water-bearing and again solid rock is related to extensive time expenditures to rearrange the driving technology (re-equipping the face with machinery, materials and structures). Accordingly, one must constantly seek and utilize every opportunity that contributes to acceleration of the work: rapidly alter methods of driving and to adapt them to local geological conditions without significantly reducing the rates of constructing the tunnel. Specifically, the geologists of Bamtonnel'stroy are conducting advance test drilling at essentially all faces, from the results of which preparation to future driving of complex sections is made.

As shown by experience, the invalid forecasting of engineering and geological conditions and as a result selection of inappropriate methods of conducting the work result in the fact that many transport tunnels of great length are not being constructed within the given deadlines, and some of them are being introduced with a long delay and overrun of the estimated cost.

For example, it is known that errors in geological conclusions resulted in breakthrough of the river, under which a section of tunnel passed, in construction of the Lechberg railroad tunnel in Switzerland (13.7 km). The direction of the tunnel route had to be changed as a result and its length had to be increased by 870 meters, which resulted in an increase of the cost and extension of the deadline of construction.

Overcoming an unforeseen zone of strong rock pressure and a large influx of underground water only 42 meters long required 1.5 years from the builders with a sixfold overrun of funds in the Simplon I tunnel between Switzerland and Italy.

Construction of three mine shafts was provided by the initial draft for organization of construction in the Severo-Muysk tunnel. The new draft, compiled in 1981 and which takes into account the actual state of tunnel construction on 1 August 1981 and also the resulting need to carry out a complex of water-drainage work from the surface and from the faces on the Angarakan "washout" section, assumes the construction of an additional mine shaft No 4 (Figure 3).

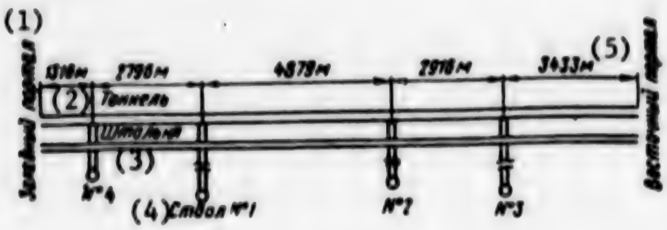

Figure 3.

Key:

1. Western entrance
2. Tunnel
3. Adit
4. Shaft
5. Eastern entrance

The tunnel is being driven primarily by the drilling-explosive method for the total cross-section using Furukava drilling rigs. The entrance sections of the tunnel and the Angarakan "washout" sections are being driven with an unmechanized heading machine 8.5 meters in diameter with erection of cast iron and reinforced concrete tubing. Saga Kogio portable forms are used in concreting the permanent casing of the tunnel and pneumatic concrete pumps on a rail carriage with capacity of $3\ m^3$ is used to deliver the concrete.

Driving the test transport-drain adit was organized from the entrances and from four shafts. With regard to the fact that the adit, like the tunnel, has a two-slope profile, driving it on a grade with removal of water by gravity flow could not be fully organized, taking into account the need for the most rapid cross-cut of it over the entire length.

Driving the adit for opening additional faces in the main tunnel must be accelerated to the maximum to complete the directive deadline for completion of tunnel construction. High-speed driving of the adit using the Robbins heading machine complex 4.5 meters in diameter and two similar supplementary complexes is required in this case. Bamtonnel'stroy is now successfully implementing this measure on the eastern section. The average rate of driving the adit with the mechanized complex comprised 159.6 m/month during the year and the maximum rate was 308 m/month.

It became possible to open two additional faces, besides the face from the entrance, on the section between the eastern entrance and shaft No 3 due to the advance high-speed driving of the adit. Cutting of face No 4 was begun after cross-cutting of faces Nos 1 and 2 (Figure 4). Thus, driving of the main tunnel on a section 3.5 km long was completed by the end of 1982.

This engineering solution--high-speed advance driving of the adit with subsequent opening of additional faces from it in the main tunnel--will also be used on other sections. All this requires clear organization of transport equipment, electric equipment, ventilation, communications and water drainage, for which the following are required:

clear organization of work according to schedules with a time shift of operations of the driving cycle of the same type at different faces;

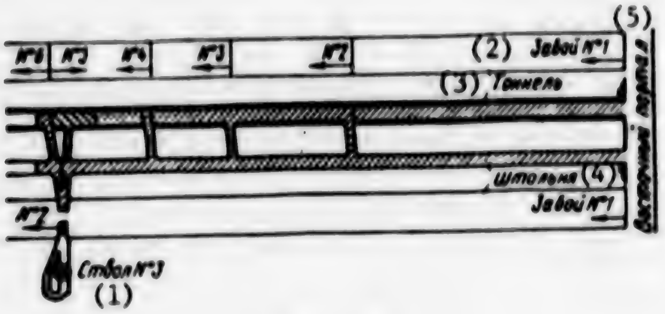

Figure 4.

Key:

1. Shaft
2. Face
3. Tunnel
4. Adit
5. Eastern entrance

organization of train traffic using sidings in the adit and construction of transport cross-cuts between the tunnel and adit;

continuous monitoring of the maintenance of hauling tracks;

equipping of all faces with telephone communications;

introduction of special equipment that guarantees automatic blocking of switches and signals, automatic opening of the wayside upon the request of the engineer, automatic switching of light signals and automatic setting of switches.

It should be noted that the facilities of the production base, technological and production buildings and structures of the entrance and shaft sites, compressor, blower, shower installations, machine shops, boiler rooms, concrete plants with stores of inert materials, materials and equipment warehouses, GSM [fuel and lubricant] storehouses, complexes for special work and purification plants--should be standard, precast-sectional and multiuse in construction of tunnels of great length.

Practice showed that with the scope of work as in Bamtonnel'stroy, there should be their own motor vehicle enterprise and a powerful repair base and centralization of questions of supply and delivery of freight to the construction sites of tunnels, energy-machine support in repair and manufacture of assembled steel sections and spare parts is required.

Well-developed settlements for the tunnel builders with social and service facilities--dining halls, department stores, clubs, schools and kindergartens--are also required.

Solution of all these problems will contribute to successful construction of the most complex tunnel structures on the BAM.

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RAILROAD

UDC 629.472.7:629.463.004.67

REPAIR FACILITIES FOR 8-AXLE TANK CARS

Moscow ZHELEZNODOROZNYY TRANSPORT in Russian No 11, Nov 82 pp 44-47

[Article by Doctor of Technical Sciences I. F. Skiba, Candidate of Technical Sciences K. V. Motovilov and Candidate of Technical Sciences V. N. Zhdanov]

[Text] One of the most important methods for improving shipments of fuel and energy freight is introduction of new efficient rolling stock and specifically of 8-axle tank cars with capacity of 120 tons, on the railroads. As is known, use of them will permit a significant increase in the mass of the train with existing restrictions on its length and will guarantee an increase of the carrying and traffic capacity of the lines, a reduction in the cost of shipments and an increase of labor productivity. A further increase of deliveries of high-capacity 8-axle tank cars to transport is planned in the future with regard to these advantages.

Ever more extensive use of the indicated rolling stock requires development of a modern, well-organized and technically equipped rail car repair base to guarantee reliable operation of it. There are as yet no specialized enterprises to perform the scheduled types of repair of 8-axle tank cars. They are repaired in ordinary rail car depots that repair 4-axle tank cars or other types of rail cars. Thus, 8-axle tank cars have been repaired during the past few years at four depots on the North Caucasian Railroad and at three depots on the Eastern Siberian Railroad. Depot repair of 8-axle tank cars is frequently scheduled by the rail car depot with low level of mechanization of production processes that does not have adequate production areas to organize repair of the indicated tank cars and the capabilities for a significant increase of production capacity.

It is very complicated to guarantee high-quality restoration of 8-axle tank cars under these conditions and in the required volume since they have different size parameters and design features of some assemblies and parts. Sending them for repair frequently causes both technical and organizational difficulties that interrrupt the established operating rhythm of the repair enterprise and that worsen its production indicators.

The rail car maintenance stations, located at the test areas for operation of these tank cars, are also unable to carry out routine repair of them with high quality both in trains and on specialized repair tracks due to the absence of the corresponding technological equipment, spare parts, technical documentation and also experience in repair of specific structural assemblies of tank cars.

All this has a negative effect on completing the required volumes of depot repair of tank cars both in the quantitative and qualitative sense. Thus, the need for depot repair of 8-axle tank cars was satisfied by only 18 percent on the North Caucasian Railroad, by 33 percent on the Kuybyshev Railroad, by 40 percent on the Privolzhsk Railroad, by 85.4 percent on the Far Eastern Railroad and by 89.3 percent on the Eastern Siberian Railroad in 1981. The plan for depot repair of 8-axle tank cars was fulfilled by only 45 percent in 1981 throughout the railroad network. It should also be noted that more than 600 8-axle tank cars now require major overhaul. However, the problem of conducting it at rail-car repair plants has not yet been finally resolved.

As a result many 8-axle tank cars have been operated for a long time past the period of scheduled repair, which results in accumulation of malfunctions, serious damage to the structural elements of the tank cars and as a result to an increase of the laboriousness of repair work.

Work is now being intensified on the network, according to order No 22Ts dated 3 May 1982, on preparation of rail car depots and of their operating subdivisions to repair and maintenance of 8-axle tank cars and primarily at those enterprises which have been allocated specially for these purposes. Research conducted by the Department of Rail Cars and Rail Car Management and by the Rail Car Scientific Research Laboratory of the Moscow Institute of Railway Transport Engineers (MIIT) may be of practical assistance to line enterprises in organizing the repair of new rolling stock. Investigations to develop production processes and specifications for design of new rail car depots specialized in repair of 8-axle tank cars[1] have now been completed upon the assignment of the Main Administration of Rail Car Management, MPS [Ministry of Railways]. Moreover, a method of reconstructing existing depots to guarantee the capability of performing depot repair of 8-axle tank cars in them parallel with repair of 4-axle rail cars has been developed. It should be emphasized that reconstruction of existing rail car depots with introduction of modern methods of organization of repair and high-performance production equipment is more preferable than construction of new enterprises, since considerably fewer capital expenditures are required for creation of the base and the deadlines for introducing the production capacities into operation are reduced considerably.

During developments using methods of investigating operations and design of large systems, to which rail car depots can also be applied, the production processes and layout of a number of enterprises that repair tank cars were studied: Moskovka, Yaroslavl-Glavnyy, Khabarovsk-2, Benzin, Groznyy, Rybnoye and so on. The results made it possible to formulate the requirements on design of rail car depots with annual program from 2,000 to 12,000 rail cars, recommended as standard for operating proving grounds for 8-axle tanks cars.

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[1] See ZHELEZNODOROZHNYY TRANSPORT, No 4, 1979.

The basis of the developments were modern methods of rail car repair, based on the flow-line method of repair of assemblies and parts of rail cars at the main production shops. Thus, extensive use of specialized flow lines for repair of 4-axle buggies, automatic coupling equipment, wheel pairs with roller axle-box assemblies and so on was provided. This will make it possible to raise the level of mechanization of laborious processes, labor productivity and repair quality.

The stationary method is now employed in rail car assembly shops of practically all rail car depots that repair tank cars. However, this method may not meet the increasing needs on repair of rolling stock as the volumes of repair increase. Therefore, the flow line-conveyor technique was also adopted as a basis in the assembly shop when working out the production process for depot repair of 8-axle tank cars. It should be noted that it is simpler to guarantee conversion of rail car depots that repair tank cars to the flow line-conveyor method than other methods, since the volume of work on the boiler is less significant in total labor expenditures for repair of a tank car when repairing them than in restoration of the bodies of other rail cars. The fluctuations in the difference in the volume of repair work for tank cars are also insignificant.

Rail car depot Khabarovsk-2 of the Far Eastern Railroad, at which depot repair of gondolas and tank cars is now carried out, was selected as one of the baseline enterprises for tank car repair on the basis of studying the existing and future operational proving grounds of 8-axle tank cars. A considerable number of 8-axle tank cars is now operated on the proving ground between Uyar and Khabarovsk-2 Stations and it will increase even more in the future.

According to the production process existing at the depot, rail cars are repaired on three tracks for assembly of a section by the stationary method. The shop has non-standard dimensions, which makes the introduction of progressive methods of organization of repair work considerably difficult. One track of the assembly section is specialized in repair of tank cars while the two other tracks are designed for depot repair of gondolas. Thus, the existing building of the assembly section essentially cannot be used for repair of large-capacity 8-axle tank cars using advanced technology.

The production process of depot repair of 8-axle tank cars by the flow-line method was worked out for Khabarovsk-2 depot with regard to the operating experience of leading depots that repair tank cars. In this case one proceeded from the need to guarantee minimum expenditures on reconstruction and maintenance of existing production sections and transport ties between them.

According to the project, repair of 8-axle tank cars in the assembly shop is to be carried out at four positions (Figure 1). The first and second of them are designed to perform metal working and straightening-welding operations on the chassis and on the boiler, respectively, the third position is designed to repair pneumatic equipment and brake rigging, while the last position is designed to paint the tank cars and to apply stencils. The bogies are rolled from under the rail cars immediately after the rail car is moved to the first position. The connecting beams are then removed from the 4-axle bogies, which are then, like 2-axle bogies, transferred to the bogie section using a travelling crane or transborder bogies. Upon completion of the work at the position, the 8-axle tank cars are lowered onto the production bogies and are moved by traction conveyor to the next position. The tank cars are again lifted in the middle of the boiler rhythm, the production bogies are returned to the first position by reversing the conveyor and the repaired main bogies are rolled under the rail car, the same one in which it operated.

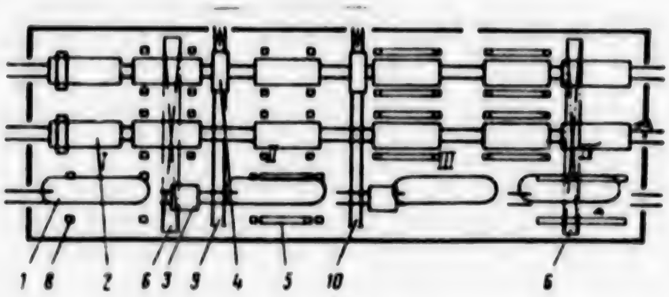

Figure 1. Schematic Diagram of Rail Car Assembly Section: I-IV--flow-line positions for repair of 8-axle tank cars; 1--8-axle tank car; 2--gondola; 3--production bogies; 4--transborder bogies; 5--stationary platforms; 6--travelling cranes; 7--painting platforms; 8--jacks; 9--track for delivery of bogies for repair; 10--track for removal of repaired bogies

The length of the rail car assembly section must be approximately doubled to introduce the considered production process for depot repair of 8-axle tank cars. Several versions of this design are possible (Figure 2). Thus, assembly section can be extended in the westerly direction, but this results in a considerable reduction of lighting in the wheel shop due to elimination of windows. Moreover, the section for routine uncoupled repair of rail cars must be transferred to another position, which is now located directly in front of the depot building. If the shop is extended in the opposite direction, difficulties may arise with disposition of the repaired rail cars due to a reduction of the length of the parking tracks. One should also bear in mind that any one-way extension of the rail car assembly shop results in disturbance of established production and transport ties between subdivisions and specifically complicates transport of bogies and connecting beams for repair.

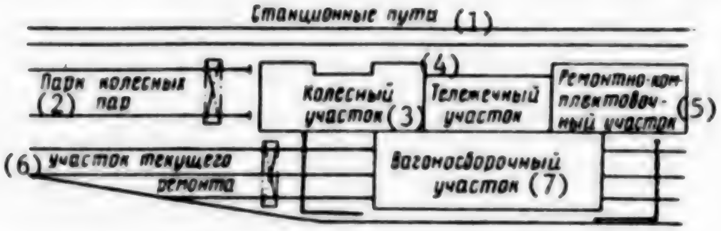
Станционные пути (1)
Парк колесных пар (2)
Колесный участок (3)
(4)
Тележечный участок
Ремонтно-комплектовочный участок (5)
(6) участок текущего ремонта
Вагоносборочный участок (7)

Figure 2. Sample Layout of Rail Car Depot

[Key on following page]

[Key continued from preceding page]:

1. Station tracks
2. Wheel pair stock
3. Wheel section
4. Bogie section
5. Repair-makeup section
6. Routine repair section
7. Rail car assembly section

The most efficient version of reconstruction with regard to all the enumerated factors is extension of the shop in both directions simultaneously (shown by the color in Figure 2). In this case the layout of the main sections of the depot are essentially unchanged and the established transport flows are retained. Moreover, minimum construction and installation work and expenditures are provided for development of the bogie and wheel-roller sections, the need to increase the capacities of which arises when organizing a depot for repair of 8-axle tank cars. Introduction of two flow line-conveyors for repair of bogies and one line for repair of connecting beams in the bogie section is specifically provided in the considered version of reconstruction. The movement of wheel pairs to repair and reverse will be encompassed into a U-shaped line without any oncoming or inefficient movements. The production buildings of the bogie and wheel-roller sections now have a rather heterogeneous design; therefore, they must be partially rearranged during reconstruction. Thus, to increase the area of the wheel section, it must be lengthened toward the wheel pair stock, while the area of the bogie section must be increased by converting some departments of the repair-makeup section.

Gradual conversion to repair of 8-axle tank cars is provided with regard to the fact that the entire program of the depot cannot now be fully provided with 8-axle tank cars and also with regard to the great need for repair of gondolas on the railroad. Thus, they will initially be repaired by the flow-line method on a single track only; depot repair of gondolas (see Figure 1) will be carried out on the two other tracks also by the flow-line method. As the fleet of 8-axle tank cars in the region increases, conversion of the second and then of the third track for repair of them will then occur. Phase conversion is possible due to the specially developed production process for repair of gondolas on a flow-conveyor line, on each of the positions of which two rail cars each are located. This technology for repair of gondolas will permit regrouping of equipment within compressed deadlines and at low expense if needed and to organize repair of tank cars on the second and third tracks.

The flow of 8-axle tank cars in the central regions and specifically within the Moscow Railroad, was increased appreciably during the past few years, which determines the need to complete a specific volume of depot repair of them here. In this regard, MIIT, at the initiative of the rail car management service of the railroad, analyzed the possibility of completing scheduled renovation of these rail cars at the Rybnoye depot, specialized in repair of 4-axle tank cars. Extensive reconstruction is now under way at the enterprise, during which, along with enlargement of the main shops and departments, delivery of 8-axle tank cars for repair can also be provided.

The stationary method of rail car repair is now employed at the Rybnoye rail car depot. There are two tracks on which eight repair positions are organized in the rail car assembly shop 61 meters long and 16 meters wide. After the tank cars are hoisted onto the racks, the bogies are rolled to the end of the shop and are delivered to the bogie shop via the spur tracks. It should be noted that this transfer of bogies creates great difficulties, especially during the fall-winter season. Bogie repair is organized on a flow-conveyor line. The wheel shop in which the wheel pairs and axle-box assemblies with roller bearings are repaired, is located alongside the bogie section. The roller wheel pairs are sent to other enterprises for repair, since there is no roller department at the depot.

Several versions for reconstruction of the depot that provide for an increase of the repair program for 4-axle tank cars and the capability of organizing depot repair of 8-axle tank cars was worked out with regard to the established structure of the shops and transport communications, the need to expand the production sections and to create roller departments and a park for wheel pairs.

At the request of the depot management, a version of reconstruction was specifically worked out, oriented toward the station method of repair. Calculations of the production capacity with scheduled idle time of tank cars during repair and with the number of existing repair bays showed that in this case the assembly section must be expanded to increase the production capacity of the depot. This can be achieved by lengthening the shop by 42 meters in one direction. As a result, it becomes possible to create one each additional bay on each track and to have sufficient areas to roll the bogies from under the rail cars and to deliver them for repair. The bogie section can be transferred and located parallel to the new repair bays for rail cars. The existing building of the bogie shop must be torn down and a building 42 meters long and 18 meters wide must be constructed on the site for reconstruction of the wheel section and to create a roller bearing department.

The complexity of the indicated version of reconstruction includes the need to complete construction work under conditions of a functioning depot and on sections which are now operating under great intensity. Moreover, the rearrangement requires rather significant capital investments, while an increase of the production capacity of the depot will not exceed 20 percent. It will be essentially impossible to repair 8-axle tank cars with this version of reconstruction.

The second version of reconstruction provides for completion of depot repair of tank cars on a U-shaped flow-conveyor line (Figure 3, except that indicated in color), which will permit a significant increase of the production capacity of the depot by specialization of each position to complete the production process of operations specified by the schedule and to equip the positions with specialized production equipment. There is no need to lengthen the rail car assembly section in this case. The project calls for organization of four positions on the flow line with delivery of two 4-axle or one 8-axle tank car to each position. The first position is designed for completion of metal working-welding operations on the boiler, while the second is provided for completion of this work on the chassis with the bogies rolled from under the rail car. Repair of the pneumatic equipment of the brake system and of the

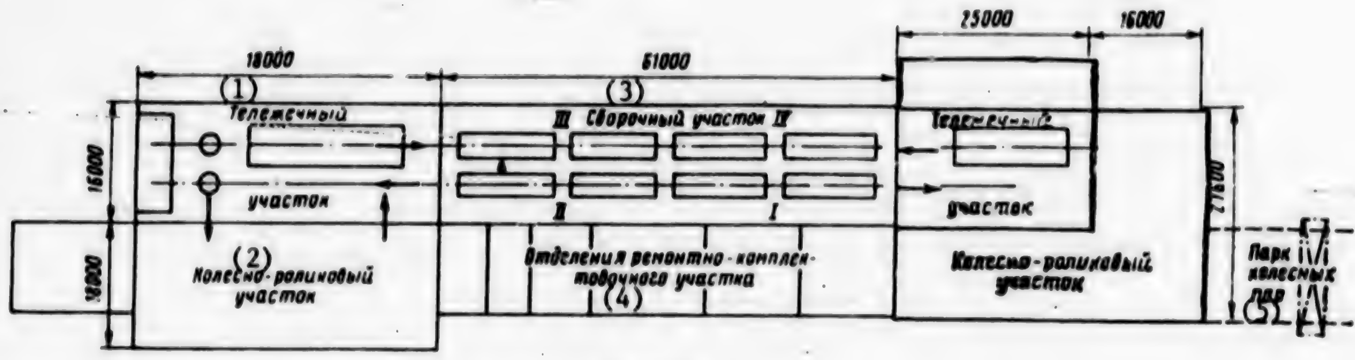

Figure 3.

Diagram of Depot Reconstruction: I-IV--flow-line positions for tank car repair

1. Bogie section
2. Wheel roller section
3. Assembly section
4. Departments of repair-makeup section
5. Wheel pair park

brake rigging is provided on the third position. The bogies are rolled under the rail cars here. Painting, placement of stencils and turnover of the tank cars to the rail car examiner will be carried out on the last and fourth position.

Rearrangement of the buildings only for the bogie and wheel-roller sections is essentially required for the given version of reconstruction. However, delivery of rail cars for repair should be carried out in this case from the south end of the depot, which may result in frequent interruptions of rail car delivery from the station due to local conditions.

A third version of reconstruction was worked out to correct the noted deficiency, which is similar to the previous version in the production process of the rail car assembly section, but has the opposite direction of the U-shaped flow line. Rearrangement of the building for bogie and wheel pair repair sections (see Figure 3, shown in color) to the end of the rail car assembly and repair-makeup sections is proposed. The distinguishing feature of this version is the capability of creating a wheel pair park alongside the wheel-roller section. If this version of reconstruction is realized, construction work will be performed outside the production zone, i.e., it will not interfere with the main production activity of the depot. The equipment from the old building of the bogie and wheel section can be transferred gradually to the new building with regard to the influx of a specific quantity of new production equipment. Difficulties in the work of the assembly section should be minimal in this case.

Reconstruction of individual depots with regard to delivery of 8-axle tank cars for repair will permit creation of the necessary repair base for them at the least expenditures and will guarantee timely and high-quality renovation of large-capacity rail cars and consequently reliable operation of them.

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ALMA-ATA RAILROAD CONTINUES TO MISHANDLE EMPTY RAIL CARS

Moscow GUDOK in Russian 2 Dec 82 p 1

[Text] In GUDOK's "Fuel Dispatcher" column, we have frequently discussed the situation whereby the regulating railroads regularly upset the tasks for transferring empty cars to the coal-shipping main lines. And the Alma-Ata Railroad is always one of the culprits. The Alma-Ata is supposed to transfer to its neighbors no less than 1,100 gondola cars per day. But it transfers 500-600 cars and occasionally 800 cars per day. The result is deplorable: during the past month there was a shortfall of more than 13,000 of the scarce gondola cars.

The chiefs of the main lines which prevent fulfillment of regulatory tasks often excuse themselves by saying that they must assure that goods are shipped from the enterprises which they service. But such excuses are not legitimate when operational work is in terrible shape on the railroads and there are a lot of deficiencies in making use of rolling stock. Such a situation exists on the Alma-Ata Railroad. The freight car pool on the Alma-Ata Railroad is considerably above the norm and large surpluses of transit cars have been accumulated. There are many abandoned trains on the railroad. There is no way to remove the trains: the technical condition of the locomotives on the Alma-Ata route is perhaps the most unsatisfactory in the rail network.

Conveyance of local freight is poorly organized. And again, everything is being held up, basically, by a shortage of locomotives. Frequently, the diesel locomotives earmarked for conveying local freight are diverted to other tasks, and those locomotives which remain are continually going in for unscheduled maintenance.

This is how messes snowball, causing coal-loading railroads to suffer as they remain on a starvation ration without the empty gondola cars which they expected to receive from the Alma-Ata Railroad.

9887
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RAIL CAR IDLE TIME REDUCED ON BELORUSSIAN RAILROAD

Moscow GUDOK in Russian 15 Nov 82 p 2

[Article by GUDOK correspondent D. Sverkunov from Minsk: "Reducing Rail Car Idleness"]

[Text] The Lvov Comprehensive System for Efficient Use of Rail Cars has been extensively developed on the Belorussian Railroad. Specialists from the main line have taken a creative approach to introducing the system. Unified multipurpose crew shifts are being set up at transportation junctions. In addition to railroad workers, the shifts include motor-vehicle drivers and transportation shop employees from industrial enterprises. Already 172 such shifts have been set up at 43 transportation junctions.

There is also an innovation in this program. With the aid of computers, a daily inventory of rail cars has been introduced at 529 enterprises. Specialists from Lvov Oblast were interested in this innovation. To study this experiment, specialists from Lvov and from a number of divisions of the Lvov Railroad came to Minsk. In turn, transportation shop employees from a number of Belorussian industrial enterprises traveled the Lvov.

During the first 9 months of 1982, car idleness on industrial spur lines declined for the republic as a whole by 0.7 hours and more than 6,000 cars were saved from standing idle. The situation is best in Vitebsk, Gomel' and Mogilev Oblasts.

There are many positive examples. But there are also shortcomings. All of this was dealt with at the republic-level select conference which was conducted by I.V. Filatchenkov, head of the transport and communications department in the Central Committee of the Belorussian Communist Party.

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RAILROAD

LOCOMOTIVES PLAGUED BY OPERATIONAL ABUSE, REPAIR PROBLEMS

Moscow GUDOK in Russian 4 Nov 82 p 2

[Text] At the end of October, during the first heavy snowfall on the Northern Railroad, electric locomotives began to be waylaid for unscheduled repairs. The workers on the Northern Railroad had not taken care, when preparing the locomotives for winter, to keep snow out of the tractive engines. This was the deplorable result. Unfortunately, this is not the only example of disregard for time-honored procedures for preparing locomotives to operate in harsh winter weather. Experience convincingly confirms that without such preparations, it is impossible to assure normal train movement and to successfully fulfill the transport plan.

An analysis shows that locomotives on a number of railroads, particularly the diesel locomotives, enter the winter in an unsatisfactory condition. How can you talk about diesel and electric locomotive reliability, when the locomotives regularly go in for unscheduled repairs? For example, on the Tselina Railroad during the last three quarters, there were 117 unscheduled repairs of diesel locomotives for every million kilometers traveled. On the South Urals Railroad, there were 84.6 unscheduled repairs per million kilometers traveled; on the Gorkiy Railroad, the rate was 80.6; on the Southeastern it was 79.1; on the Odessa it was 76.9; on the Alma-Ata Railroad, the repair rate was 71.9 per million kilometers.

It is well known that, when the number of unscheduled repairs for locomotives reaches 35-40 per million kilometers traveled, there will be serious interruptions of traffic. When the number of unscheduled repairs is 60 and higher, the flow of train traffic will be limited. Thus, the technical condition of the diesel locomotives on the abovementioned railroads is extremely favorable.

Electric locomotives have been going in for unscheduled repairs more frequently on the Lvov, Transcaucasian, Sverdlovsk, South Urals, Kemerovo and Krasnoyarsk railroads. The abrupt deterioration of the locomotives' technical condition is primarily a result of disregarding the rules for locomotive operation, routine maintenance and repair. On a number of railroads, the locomotive crews have dodged servicing and maintenance, and have become "riders." The chiefs of services, the depots and the engineer instructors are not requiring that locomotive crews maintain the equipment entrusted to them in proper condition, so that minor malfunctions can be corrected in time. After all, if these minor defects are ignored, they will eventually develop into major problems. Who better than the engineer instructors to insist that the rule of the exemplary workers be adopted everywhere: turn your locomotive over to the next crew in better condition than it was when you got it! But some engineer instructors have begun to consider themselves inspectors or, rather, recorders of violations, but not as mentors.

All this is evidence of serious shortcomings on the part of party and labor union organizations at the depots, in educational work with crews. In many depots, these organizations have not managed to convince the new group of engineers and assistants that even today care of machinery is necessary, or to instill them to care for the equipment.

Many of the locomotive technical service points are not fully completing, nor with high quality, all the work envisioned by the production process. There are many examples of this. Diesel and electric locomotives are sometimes released from technical service points in accord with the principle: just get it out of the repair shop and let the locomotive crew handle it. But the crew believes that it is not capable of eliminating all the maintenance workers' failings. The locomotive is constantly in such bad condition that repairing it is difficult. Also, the basic principles of using shift crews to run the locomotives are violated. This was made possible by the spread to some railroads and depots of a long-known "illness" which is ruinous to the technical condition of locomotives. The name of the illness is multiple manning.

Violations of the planned-preventive maintenance system, late production of various kinds of locomotive improvements and unauthorized increases to mileage between repairs are having very negative impacts on the technical condition of locomotives. In this regard, the situation is especially bad on the Central Asian, Far Eastern, Southeastern, Oktyabr'sk and other railroads.

Serious damage to locomotives occurs when the locomotive operating conditions are violated. Electric tractive engines cannot operate for a long period of time without undergoing damage, when the locomotive is running at low speed. For example, the minimum permissible speed on a rated upgrade slope is 23 kilometers per hour for the 2TE10 diesel locomotive. Of course, heavy trains should not be stopped on a leading slope. However, in recent years some railroads have ceased to follow these rules. For example, on the leading slope of the Chu-Chiganak section of the Alma-Ata Railroad, trains often proceed at a speed of 5-10 kilometers per hour! On this section it has become a practice to let passenger trains go through on the wrong set of tracks. To do this, the traffic controller sometimes stops as many as 11 freight trains on the leading slope. What is the result? In moving these trains from a standstill, the tractive engines break down. It is no wonder that just since the start of 1982, more than 2,000 tractive engines have broken down on locomotives from Chu Depot!

Recently, all these issues were examined in detail at a network-wide select conference, conducted by B.D. Nikiforov, deputy minister of railways. Detailed instructions were provided, along with the organizational and technical measures which must be implemented on the railroads to attain a sharp increase for tractive resource reliability in a short period of time. This is now the main task for all locomotive workers. The uninterrupted operation of rail transport in difficult winter conditions will depend, to a large extent, on resolving this task.

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RAILROAD

TAYSHET-LENA RAIL LINE IMPROVEMENTS

Moscow GUDOK in Russian 9 Dec 82 p 1

[Article: "Five Hundred Kilometer Barrier Passed"]

[Text]--Gidrostroitel' (GUDOK correspondent)--The state commission has accepted for permanent operation the next section of the second set of tracks on the Tayshet-Lena line. This is already the fourth of the five sections planned for 1982. Thus, the Sokhatyy-Blizhniy section was a 500 kilometer barrier which was overcome by the construction workers of "Angarstroy" [Angara Construction], who are laying the second set of tracks from Tayshet to the east.

The second set of tracks has been laid parallel to the line in use now. Construction of the second line is being accompanied by reconstruction of the stations and switching them over to new systems of electric centralized control. The second tracks have passed the dam of the Bratsk Hydroelectric Power Plant and have advanced far beyond. They have drawn nearer to Korshunikha Station--the center of the ore-extracting industry in this region.

The important Tayshet-Lena Line serves the country's largest power-industry complexes and the BAM (Baykal-Amur Main Line). The line has already become a modern double-tracked main line over a large part of its length. As regards the level of equipment with which it has been supplied, the Tayshet-Lena line is on a par with the main section of the Transsiberian Mainline.

In addition to these 500 kilometers of second tracks, the construction workers of "Angarstroy" have completed hundreds of other important railroad projects.

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RAILROAD

ELECTRIFICATION OF RAIL LINE TO CHEREPOVETS

Moscow GUDOK in Russian 21 Dec 82 p 1

[Article: "Ahead of Schedule"]

[Text] Yaroslavl (GUDOK Correspondent)--On 20 December the crew of A. Larionov, a distinguished engine-driver, was precisely on schedule in opening the first coal route, from Vologda to Cherepovets, for Severnaya Magnitka. This electrified section of track had just been accepted by the state commission.

There was a meeting in Cherepovets, at which speeches were given by transportation construction workers and by managers from party and Soviet organizations of Vologda Oblast, Cherepovets and the Northern Railroad.

Thus, the electriciation of the entire 620 kilometer Moscow-Cherepovets line has been completed. The renovation of this line was carried out in a comprehensive manner. Stations were further developed, automatic block signalling and electric centralized control of switches and signals were put into operation.

Yu. Grigor'yev, chief of Cherepovets Station, said in a conversation with this GUDOK correspondent: "A fifth blast furnace will soon go into operation at the metallurgical plant. Shipments to us of raw materials and coal and loading of metal will increase significantly. The railroad workers are prepared to handle the additional transport."

The construction workers and operational workers worked closely together. The sub-divisions of the Ministry of Transport Construction completed electrification of the section ahead of schedule. Also, the workers of Cherepovets Station fulfilled the loading plan ahead of schedule for 1982 and for the first two years of the five-year plan.

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RAILROAD

GRAIN HANDLING PROBLEMS IN SARATOV AREA

Moscow GUDOK in Russian 4 Nov 82 p 1

[Article by GUDOK Correspondent S. Kasatyy from Saratov: "Why the Grain is Not 'Moving'"]

[Text] Procurement officials have been visiting more often the management of the Volga Railroad. They go there, make phone calls and write, all on the same subject: there are no freight cars, and grain shipments are breaking down.

The situation with shipments of grain, flour and balanced fodder has worsened considerably on the railroad. The main line's workers are already more than a quarter of a million tons in arrears for grain shipments. Tens of thousands of tons of grain are laying out in the open air in bundles at Pallasovka, Piterka, Nouvouzensk, Mokrous, Rukopol, Zolotaya Step' and other stations. Perhaps there really is a shortage of rolling stock? No, it seems that all is in order in this regard. In October, the railroad had an average of 2,500 empty box cars, whereas the norm was 1,580. More than 1,000 box cars in excess of the plan were involved with local freight.

So why is it that the procurement officials' demands were only satisfied half the time, when there is such an abundance of freight cars? The main reason is that the main line's Car Preparation Points (CPP) have not been handling their tasks at all. For example, in the first ten days of October, only 51-52 percent of the readied box cars were fit to be loaded with grain; in the second ten days of October, the percentage was even lower. Yet, before the start of harvest shipment, the Volga Railroad workers pledged to prepare for food-loading as much as 80 percent of the rolling stock arriving at the CPPs! It appears that this was idle talk. Moreover, there have been a lot of complaints about the poor quality of car preparation. Thus, the cars are being rejected everywhere. If they're not accepted at one place, they are dispatched to another. That is why such box cars are moved from section to section, from division to division, travelling empty for hundreds of kilometers. The other day, 17 "readied" cars were not only unable to be loaded with food, they could not be used at Vol'sk Station for loading cement, since they were in such poor condition. What happened then? The traffic managers sent those box cars to Trofimovskiy-1 Station, where a use was found for the cars after thorough repairs were completed: they were loaded with refrigerators.

The CPPs in the Rtishchevo, Saratov, Yershov and Volgograd divisions are now operating very poorly. For example, the mechanized point at Pugachevsk has been equipped with the most recent innovations in transportation science and technology, but it is preparaing only a total of 25-30 percent of the box cars to be loaded with grain.

Overall, the Volga Railroad has 13 permanent CPPS, as well as several temporary CPPS. Many of the CPPs have the most up-to-date machinery and equipment, which if used skillfully and efficiently, can speed up and facilitate the process for clearning and repairing the rolling stock, and help improve the quality of work. However, let's put it bluntly: all this extensive material and technical base is not producing the required result, due to poor labor organization and a low level of executive discipline. But time doesn't wait.

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RAILROAD

USSR RECEIVES 4000TH SHUNTING ENGINE FROM CZECHOSLOVAK FIRM

Moscow GUDOK in Russian 10 Dec 82 p 1

[Article by Yu. Vereshchagin from Lyublino: "Hello, Number 4000"]

[Text] Yesterday there was a festive ceremony at the Lyublino Locomotive Depot of the Moscow Railroad in honor of the 4,000th ChME3 shunting diesel engine, manufactured by the Czechoslovak Production Association, "ChKD-Praha," being delivered to the Soviet railroad workers. The history of international economic relations knows of no other such instance, when such a large quantity of locomotives, built at a single plant, was delivered to a single customer. This was possible only due to socialist economic integration and close cooperation between two fraternal countries.

The powerful ChME3 shunting locomotives can now be seen on many lines of the rail network. These locomotives have given a great account of themselves among our operational workers.

The Czechoslovak machine-builders delivered the first ChME3 shunting locomotive 17 years ago. It took 82 months to manufacture the first 1,000 locomotives. But, it took only 42 months to assemble the last 1,000 locomotives. This comparison convincingly demonstrates how much more sophisticated the equipment used by the machine-builders of the "ChKD-Praha" enterprises has become and how much the scale of their activities has been expanded.

More than 100 enterprises and organizations in Czechoslovakia participate in producing these locomotives. For example, the "Trakce" Plant delivers electrical equipment, the Wilhelm Pik and "Gradec-Kralove" enterprises produce diesel engines. The diesel locomotives themselves are assembled at the "Lokomotivka" Plant.

By 1985, the "ChKD-Praha" Production Association will deliver another 1,000 ChME3 shunting diesel locomotives to the Soviet Union.

The festive ceremony at Lyublino Depot was attended by representatives from the "ChKD-Praha" Production Association, diplomatic officials from the Czechoslovak Embassy in the USSR, executives from the USSR Ministry of Railways and representatives of the Moscow community.

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